

CITY OF HARRINGTON
2004
COMPREHENSIVE PLAN

Prepared for:
City of Harrington
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W/LUPA comments

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1 SUMMARY AND KEY INDEX

Summary

The City of Harrington has a history of steady, sustainable growth and maintains the position that such growth is necessary for the health and well being of the community. As a result of the process to update the City's Comprehensive Plan, four goals are identified which reflect the City's current outlook and the impacts which anticipated growth could have in the next five years. These are: to optimize the City's transportation assets, to preserve neighborhood character, to be in compliance with environmental regulations for the watershed, and to support Harrington's youth.

The City is well aware that there is limited capacity in the wastewater system. In recognition of these limitations, Harrington will proceed cautiously with new development approvals and carefully evaluate annexation proposals to ensure that development proceeds at a pace that is sustainable for the City. No annexation will be considered on any property that does not already receive City services, including sewer and water, until the I & I problem is addressed and the implementation of an aggressive repair schedule is in place.

These goals and the items proposed to achieve them are consistent with the following published plans: DelDOT's Corridor Capacity Preservation Plan, the objectives outlined by the Livable Delaware Strategies, the Kent County Comprehensive Plan, and the Murderkill River watershed nutrient management plan. The plan is consistent with smart growth approaches that form the basis of the other planning mandates in the Harrington area.

The City of Harrington has water and sewer capacity to effectively serve its citizens and contract users. This plan includes the steps necessary to preserve and expand that capacity in order to grow at a rate that is sustainable and both fiscally and environmentally responsible.

Key Index

The Office of State Planning Coordination, the Institute for Public Administration and various state agencies have developed a number of checklists and guidance documents for use in reviewing the Comprehensive Plans required under HB 255. Table 1 uses the “Comprehensive Planning Guidelines” outline to provide a reference to the Update’s content.

Table 1 Office of State Planning Coordination Checklist

	CONTENT	Refer to:
	Legal Authority to Plan	p. 8
	Location	p. 12-13; Fig. 1, 2A & 2B
	History	p. 14-16; Fig. 6
	Community Profile	
Required	Demographic Information	p. 17-19
Required	Population Projections	p. 25-27
	Housing Summary	p. 36-38
	Economic Profile and Strategies	p. 20-23; p. 33; p. 54-55; p. 80; p. 85-86; p. 94
Required	Physical Condition	p. 56-57; p. 21-22; p. 40-41
	Government and Community Services	
	City Government	p. 30-31; Fig. 3A & 3B
	Education	p. 54-55
	Public Safety	p. 31
	Senior Services	p. 53
	Social Services	p. 48-49; Fig. 6
	Libraries	p. 53
	Health Care	p. 52-53
	Planning Process and Public Participation	p. 9-11
	Plan Elements	
	Land Use	
	Analysis of Existing Land Use	p. 40-43; p. 92; Fig. 4B & 4C
Required	Land Use Plan	p. 33-35; p. 86-88; p. 93-95; Fig. 9C & 9D
Required	Annexation Plan	p. 93-95; 9C & 9D
	Reference Maps	As noted
	Growth and Annexation	
	Description of Current Growth Pressures	p. 26-27;
	Description of Potential Annexation Area	p. 91-92; Fig. 9B
	Phasing of Annexation Plan	p. 91-92; Fig 9B
	Ability to Provide Services	Chapter 7 p. 59, Chapter 8 p. 61
	Reference Maps	As noted

	Transportation		
	Description of Transportation System	p. 48-50	
	Public Transit	p. 48	
	Sidewalks/Bicycle & Pedestrian Facilities	p. 51	
	Safe Routes to School	p. 51	
	Consistency with DelDOT's Long Range Transportation Plan	p. 51	
Required	Transportation Strategies and Policies	p. 1; p. 51-52; p. 85-86	
	Water and Wastewater Infrastructure	Water	Wastewater
	Description of Existing Infrastructure, Capacity Allocations	Chapter 7 p. 59-60	Chapter 8 p. 61-78
Required	Planned Upgrades to Infrastructure	p. 88; Fig. 7A	p. 88-89; Fig. 7B & Fig. 7C
	Natural Resources & Environmental Protection		
	Flooding		
	Special Development Controls To Achieve Flood Protection	p. 43	
	Discourage Development in High Flood Hazard Areas	p. 43; Fig. 5	
	Wetlands		
	Identification of Wetlands	p. 46-47; Fig. 5	
	No Net Loss Policy	p. 46	
	Description of Benefits of Wetlands	p. 46	
	Riparian Areas	p. 46-47	
	Water Quality & Total Maximum Daily Loads	p. 44-46; p. 47-48; Fig. 5	
	Environmental Protection	p. 45; p.47-48;	
	Agricultural Preservation		
	Agricultural Preservation Districts & PDR's	p. 80-81; Fig. 4C & 9D	

	Open Space and Recreation	
	Description of Existing Parks And Open Space	p. 41-43;
Required	Open Space Initiatives	p. 42; p. 90;
	Historic and Cultural Resources	
	Description of Historic District & Historic Structures	p. 56-57
	Identification of National Register or Eligible National Register Sites	p. 56; Appendix 4
Required	Historic and Cultural Resources Plan	p. 58; p. 87; p. 93
	Economic Development	p. 98
	Types of Industry and Business Desired	p. 21-22; p. 33-34; p. 41
Required	Redevelopment Opportunities and Strategy	p. 21-22; p. 94
	Housing	
Required	Inventory and Analysis of Existing and Projected Housing Needs	p. 36-38; p. 93; Fig 4C & 9D
	Affordability	p. 38
	Variety	p. 36
Required	Housing Pipeline	p. 38-39
Required	Affordable Housing and Community Development	p. 39; p. 86
	Lot Sizes & Densities	Fig. 4A & 4B
	Housing Maintenance Codes	Appendix 5
Required	Intergovernmental Coordination	Chapter 9 p. 79
Required	Community Design Strategies	p. 1; p. 84-88
Required	Community Facilities Plan	p. 1; p. 84; p. 88-90

Map Preparation

Maps included with this update were produced using Geographic Information Systems (GIS) technology. Sources for map features are listed briefly on each figure. The geographic framework layers (waterways, roadways, municipal boundaries et cetera) were originally distributed by the Delaware Coastal Management Program in 1998, and have been supplemented by updated layers from the Department of Natural Resources and Environment Control (DNREC), Delaware Department of Transportation (DelDOT), Office of State Planning Coordination (OSPC), Delaware Geological Survey (DGS), and the Delaware Department of Agriculture (DDA). Tax parcel polygons have been graciously provided, as unofficial data sets, by Kent County Department of Public Works.

All elements presented on the maps are subject to change and are used here for informational purposes only. Official zoning, tax parcel information, agricultural preservation status or other issues should be confirmed through the appropriate agency. The City of Harrington commends the Delaware Geographic Data Committee – an organization composed of representatives from state agencies, county and local governments, the University of Delaware and private organizations – for its leadership in standardization of GIS data, and for advancing the policy of low-cost GIS data sharing throughout the State of Delaware.

This Plan includes the following elements, as required by the Delaware Infrastructure Planning Account Grant:

- A statement on the City's position on growth, expansion, the potential for directed development;
- A discussion of the City's position in relationship to the State's goals, policies and strategies;
- A review of the geographic jurisdictions and the jurisdictional mandates of other planning agencies within the planning area;
- A description of the overall character of the area, including current and estimated population and general demographic and economic data;

- A summary of the critical community issues identified through the planning process;
- A review of how City's services and other social services (police, fire, and education, for example) support the City's overall development strategy and alternatives for meeting the plan;
- An outline of how infrastructure supports the City's overall development strategy and alternatives for meeting the plan ;
- A facilities needs assessment that will include water, wastewater (under separate study), a discussion of potential for interconnections with other municipal systems and an alternatives analysis;
- A chapter describing the planning purpose and documentation of input from other applicable planning agencies;
- A description of the planning area, in the form of maps, including an annexation plan; and
- A conclusion summarizing the relationship with other plans and consequences of implementing the plan.

2 PLANNING PURPOSE

The City of Harrington currently serves over 3,000 residents within a rapidly growing portion of Kent County. The City has developed this Comprehensive Plan in recognition of the goals and objectives outlined in Executive Order 14, HB 255 (the Comprehensive Planning and Annexation Bill).

Harrington has a history of steady, sustainable growth and maintains the position that such growth is necessary for the health and well being of the community. Harrington's centralized location, transportation system and water and wastewater infrastructure permit a wide variety of economic activities and housing options which can be protected and optimized through municipal ordinances, transportation planning, and coordination with other agencies with planning mandates for the City and its environs.

Authority to Plan

The State of Delaware outlined its goals in the December 1999 Strategies for State Policies, and March 2001 Livable Delaware initiatives, to ... "help manage new growth . . . while revitalizing town and cities and protecting the state's environment and unique quality of life." In March 2001, Governor Minner proposed and passed legislative initiatives which were directed at implementing the Strategies' goals. Key to coordinating and implementing the strategies is the mandate for each county and municipality to develop a Comprehensive Plan.

Under the City of Harrington Charter, the Planning and Zoning Commission is invested with the responsibility to provide advice to the City Council with regard to any proposed revisions or amendments to the City's Comprehensive Plan. The 2003 Plan was developed under the supervision of the City of Harrington's elected officials, and the Harrington Planning and Zoning Commission. Davis, Bowen & Friedel, Inc., was contracted in January 2002 to write the plan based on direction from the City. The format of the Plan is a written document, with supporting maps.

The Plan will be used to provide a preliminary review of annexation requests, and to provide information for the development and/or revision of the City's zoning regulations.

The adopted plan "shall have the force of Law and no development shall be permitted except as consistent with the plan." The finalized plan will be submitted to the Governor and the Governor's Advisory Council on Planning Coordination for LUPA review, possible public hearing, and ultimately, recommendations regarding certification. The City of Harrington has the right to reject or accept any or all recommendations regarding its plan. The final decision on the adoption of the comprehensive plan is that of the municipality.

The City of Harrington has the right to expand its boundaries through annexation under Title 22 Municipal Corporations. Chapter 1. General Provisions § 101 Annexation by city or town. As of July 2001, all annexations must be consistent with the most recently adopted comprehensive plan meeting the requirements of Title 22, Chapter 7. The municipality shall not approve any annexations until the comprehensive plan or plan amendment is adopted. The City of Harrington recognizes the strengths of the Livable Delaware goals, while maintaining the City's right to consider annexation requests, per the City's Charter, and to develop its own unique zoning ordinance.

Public Participation

Development of the Harrington Comprehensive Plan was directed by the Harrington Planning and Zoning Commission. Public participation was solicited through advertised Public Workshops at both the Planning Commission and Council meetings, as well as by regular presentations and discussions as agenda items at regular monthly meetings.

In addition to meetings items specifically identified as Comprehensive Plan, public involvement was generated by other workshops related to elements of the plan. A DelDOT workshop on the Corridor Capacity Preservation Program was well attended and generated comments on both

possible road re-alignments, intersection signalization on US Route 13 and concern about truck traffic through the City.

Regular discussions were heard from the public on potential annexations and the annexation plan, both pro's and con's. Finally, concern over the changing architectural character of Harrington's older neighborhoods was a frequent theme.

Some of the City's assets were identified as 1) its existing commercial enterprises including industries and surrounding farms, 2) the City's commitment to preserving its railroad heritage, 3) its ability to provide reliable water and sewer service and 4) Harrington's location within an easy drive to employment centers, education opportunities and Delaware's recreational areas.

Infrastructure Planning Account Grant

The initial planning activities were funded with State assistance through the Infrastructure Planning Account. This document is required by Title 22 Municipal Corporations. Chapter 7. Planning Commission§ 702 Comprehensive Development Plan.

The scope of work which produced this Plan included:

- Updating the City's planning area and base map, to show the City boundary, 5-year planning area, and available records on City zoning.
- Holding public meetings, through the Planning Commission and Council for discussion and approval of an Annexation plan.
- Initiating discussions between the City (Planning Commission, Council and City Departments) and representatives of the County and various State planning agencies (OSPC, DNREC, Department of Agriculture, Lake Forest School District, for example) to form the basis of a draft document.
- Developing an assessment of infrastructure and security needs for the planning area (including commonalities and/or physical interconnections with other systems), capacities, and expansion potential.

- Evaluating alternatives to address the infrastructure and security needs identified.
- A review of the Plan through the State LUPA process.

Appendix 1 includes a copy of the grant application for Livable Delaware assistance to update the Comprehensive Plan.

Appendix 2 is the previous plan under amendment.

Appendix 3 includes correspondence and meeting minutes documenting the public involvement and inter-agency coordination that supports the Final Draft.

3 LOCATION AND PLANNING AREA

The City of Harrington is centrally located in Delaware, in Kent County along the route of the historic Delaware Railroad. The City is approximately 75 miles from Philadelphia, Pennsylvania, 75 miles from Baltimore, Maryland and 80 miles from Washington, D.C. The City of Harrington has long been an important commercial and agricultural center and is known as the Hub of Delaware.

The City is situated on US Route 13, in southwestern Kent County, and is 12 miles south of Dover, the County seat and State Capitol and shown on Figure 1.

At the State level, Harrington's citizens are represented by elected officials of Senate District 16 and House District 30. Kent County is divided into six Levy Court districts that elect the County's governing commissioners. Harrington is located within the 6th District.

The City is located within the Lake Forest School District for public education and the Kent Conservation District with responsibility for sediment and erosion control and storm water management issues. The City is located in the Mispillion Hundred geopolitical division for property ownership location.

The City's physiographic location is described as the Atlantic Coastal Plain, and the Delmarva Peninsula. In Kent County, the province is flat to rolling, with the ground surface at less than 100 feet above sea level near the Maryland/Delaware boundary. The ground surface elevation falls steadily to near sea level at the Delaware Bay shore.

Harrington lies within the Delaware Bay drainage, and the Murderkill River watershed. Water-use and planning for the Delaware Bay drainage are overseen by the Delaware River Basin Commission. Environmental compliance within the watershed is one of the key challenges facing Harrington under this planning period.

The Harrington WWTP is located in, and includes permitted outfall into the Delaware River Basin, and the Murderkill River Watershed. The area that is served by the Harrington wastewater treatment system includes portions of the Marshyhope Creek Watershed of the Chesapeake Basin and the Murderkill River Watershed of the Delaware River Basin.

A map showing the location of Harrington and the vicinity that is used as the greater planning area of this Plan is shown as Figure 2A. The greater planning area was patterned from the Kent County growth areas outline and the State Strategies “Primary and Secondary Developing Areas” outlines. The planning area also represents the lands that could reasonably be served in the future by Harrington’s wastewater system.

In May 2002, the planning area was presented to the County Planning Department and was included in the County’s Comprehensive Plan maps and growth overlay outline.

Although not intended as the Annexation Plan under this 5-year plan, the City knows growth within the planning area will affect Harrington, through demands on its water and wastewater facilities, local transportation network, education system and environment. Thus, the lands outlined include an area that demands coordination between the appropriate agencies with planning mandates and the City. The adoption of the area by the Kent Comprehensive Plan is an example of successful intergovernmental coordination promoted by the planning process.

Figure 2B is a generalized map of the City of Harrington to assist the reader in navigating the City as various planning issues are discussed.

4 HISTORY

The Mispillion Hundred in western Kent County was settled in colonial times as a farming district. Without a significant, navigable waterway, the Hundred developed as a collection of small crossroads communities.

Harrington's roots can be traced back to the 1730's and a settlement developed by the Clark family. By the 1800's, Clarks Corner was well established at the crossroads of the Frederica and Milford Roads with an inn, tavern, store and mill nearby. The inn, owned and operated by Benjamin Clark, was located near today's intersection of Commerce St. and Railroad Avenue.

Delaware's colonial governments recognized that roadways linking the southern portions of the peninsula and the urban centers of Wilmington and Philadelphia were vital and by the mid-1750's, Delaware had a distinct network of roads. The principal land route through the colony roughly followed today's US Route 13/US Route 113 alignment from Wilmington in New Castle County, to Dover, Milford and on through Georgetown in Sussex County. Because of limitations to the transportation network, the western portions of the State remained dedicated to serving very local needs.

The importance of Clarks Corner was significantly changed in 1856, when the Delaware Railroad was constructed from Dover to Seaford, by way of Clarks Corner. The Delaware Railroad was the southern extension of the Philadelphia, Wilmington & Baltimore Railroad, which in turn was a division of the Pennsylvania Railroad.

Matthew J. Clark subdivided a portion of his land into town lots that quickly became the nucleus of the community. A railroad station and depot was established and the town flourished. A post office was established to serve the farming residences, stores and small businesses. Locally, the city became known as Junction Station, however in 1859, city was re-named Harrington, in honor of the Honorable Samuel M. Harrington, the Chancellor of the State and the first president

of the Delaware Railroad. The City of Harrington was incorporated by the General Assembly on March 23, 1869.

The development of the railroads in southern Delaware provided for rapid, all-weather transportation. The availability of rail transit and transportation nurtured community development at depot sites and transformed economies by providing vastly greater access to markets for perishable and manufactured goods.

1869 was an important year for the community. At that time a second rail line, the Junction and Breakwater, was constructed from the station through Milford and further south to Georgetown and hence on to Lewes in Sussex County. Products and produce from the Harrington area were shipped to the ports on the Delaware Bay and from there to Wilmington, Philadelphia and New York. The Junction and Breakwater solidified Harrington's place as the key transportation hub for central and southern Delaware.

In addition to the railroad yards and associated warehouses, and manufacturing were important in Harrington in the second half of the nineteenth century. The City boasted a sawmill, cannery, fruit evaporator, basket factory and fertilizer plant.

In 1880 the City was estimated to have a population of 800 persons. In 1887, the City had grown to 1,300, reflecting the growth in industry and employment opportunities. The construction of Delaware's first highways in the early 1900's assured continued transportation options for produce and manufactured goods from Harrington, but diminished the railroad's importance to the City's economy.

In 1917, the Delaware General Assembly created the Delaware State Highway Department with passage of the Highway Act of 1917. The Department quickly identified a north-south highway route that would link the County seats and larger towns and provide road access to the important railroad terminals as its first priority. The specific route ran south from Dover through

Harrington to the Town of Delmar on the Delaware Maryland boundary and was intended to parallel the Delaware Railroad right-of-way. An important feature of the alignment was that the new main road should pass outside of the established towns, rather than through them. With the construction of what is now US Route 13, Harrington remained an important transportation hub for goods and services.

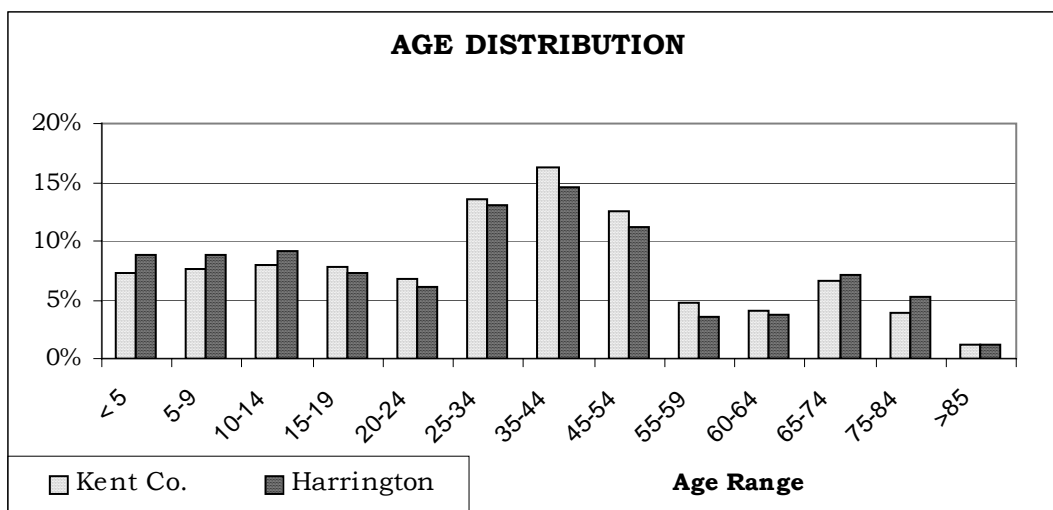
5 COMMUNITY PROFILE OF TODAY'S CITY OF HARRINGTON

A Railroad Town

The railroad's imprint on the City's built environment remains visible in the form of the historic depot and railroad museum, the track and siding at Railroad Avenue and Clark Street, the State Fairground and industries located on the tracks. With the opportunities opened by the railroad, new families moved into Harrington and swelled the population with young people eager to make a better life. The City's heritage as a railroad town, with its rise and decline, is reflected in its demographics and economic statistics today as reported by the 2000 Census.

The population of Harrington is relatively younger than Kent County as a whole. Kent County's median age is 34.4 years, while the median age of Harrington's population is 32.4 years. While the County's population average increased, Harrington's average age has declined since the 1990 census. Contributing to the lower average age is the greater percentage of school-aged children living in Harrington. Chart 1 compares the age distribution of Harrington and Kent County.

Chart 1 Age Distribution Comparison



Source: U.S. Census 2000

The age distribution and decline in median age may reflect the recent addition to the City of

affordable housing options that are attractive to young families. The availability of jobs at the Fairgrounds that require less experience and fewer technical skills may also contribute to Harrington's younger population.

As with many of Kent County's towns and cities, the percentage of elderly persons is also greater than the County at large. Smaller homes and lots, availability of apartment or senior housing and proximity to senior services may contribute to this statistic.

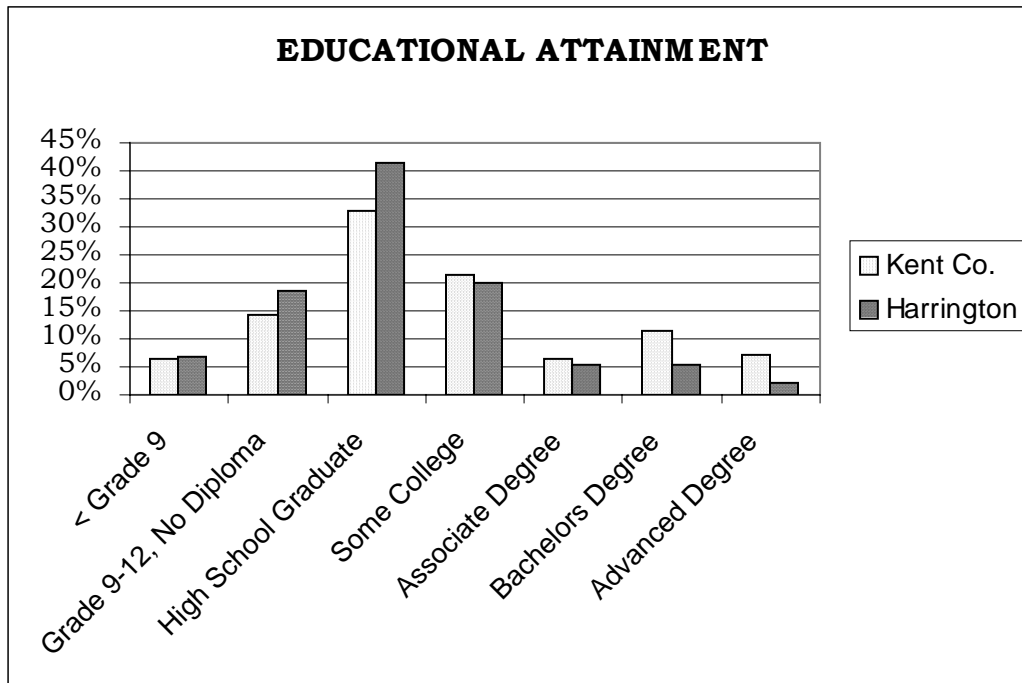
Harrington's educational statistics are in coordination with the population age. With a larger percentage of young families, the number of persons with primary and secondary school levels is also larger. The school age children are attending the Lake Forest schools within the City.

The City has a strong interest in having high-quality primary and secondary education available to its current residents and to those it may attract in the future.

There are relatively fewer adults with Bachelors or higher college degrees. This is probably a combination of both the age of the population and the types of employment opportunities within and near the City. Towns and cities in central Delaware are able to offer lower-cost housing and employment for less skilled workers.

Chart 2, below, compares the educational attainment for Kent County and for the City of Harrington.

Chart 2 Comparison of Educational Attainment



Source: U.S. Census 2000

With the strong population growth indicated by the 2000 Census, the diversity of Harrington's population also changed somewhat. While all reported races and ethnicities increased, the reported number of American Indians increased by the largest percentage (a 20-fold increase). The City's racial and ethnic make up is tabulated in Table 2 below.

Table 2 Harrington's Racial and Ethnic Diversity

			Population			
	White	Black	American Indian	Asian	Hispanic	Other
1990	1933	361	1	10	21	6
2000	2386	715	20	24	80	30

Source U.S. Census 2000

Note that the 2000 census allowed people to claim more than one racial or ethnic group.

Economics

Harrington's greatest economic growth came with the advent of all-weather rail transportation in the 1860's. Merchants and local businessmen first handled their financial needs through banks in Milford, but in 1888 the First National Bank opened and others soon followed.

Harrington's current economic base is still divided between light industry and manufacturing, with the more recent addition of service and an important entertainment sector. The largest employers within the City's sanitary sewer service area are included in Table 3.

Table 3 Harrington Area Employers

Employer	Type of Business	No. of Employees
Delaware State Fair	Midway Slots and Simulcast	± 500
Burris Foods	Food storage and distribution	± 200
Inland Paper Board	Manufacturing	± 160
Huntsman Packaging	Manufacturing	± 54
Joseph Cunane	Environmental services	± 50
Hughes Real Estate	Restaurant	± 39
Gus Koutoufaris	Restaurant	± 20
Sunny Hospitality	Motel	± 14

Source: City of Harrington

Over half of Harrington's labor force is employed in four business sectors located primarily beyond the City limits as shown in Table 4.

Table 4 How Residents are Employed

Business Sector	Persons	Percent of Total Labor Force
Arts, entertainment, recreation, accommodation and food services	229	16.3%
Manufacturing	198	14.1%
Education, health, social services	197	14.0%
Retail trade	172	12.3%

Source: U.S. Census 2000

Redevelopment Opportunities

Harrington's industrial and commercial success in the early 1900's produced a number of developed properties that today are under utilized and may be suitable for re-development through a variety of programs. The Brownfields Program under DNREC has cataloged many *potential* remediation sites within the older center of the City, although there are no identified environmental remediation projects. The City will assist interested property owners or sellers in utilizing the Brownfields Program to identify environmental liabilities, through the program's assessment functions, or through support of the Voluntary Clean Up program also offered by the DNREC Site Investigation and Restoration Branch.

In addition, the City also includes buildings that would be suitable for historic restoration or renovation. While some Grant-in-aid money may be available for preservation project on the local level through SHPO, the City recognizes that the State's Historic Preservation Tax Credit Program may be more accessible to the public that may be interested in initiating a restoration or

preservation project. Such projects require Certification as Historic Property, which may be accomplished in partnership with SHPO, through local ordinance and SHPO certification.

The City also participates with Kent County in the Community Block grant program for renovations sub-standard housing on a financial need basis.

The City of Harrington maintains the position that sub-standard or under utilized properties within the City can slow the City's efforts to provide a varied and vital community to its citizens. The City prides itself on vigorously enforcing property maintenance codes to protect all members of a community from those few who allow their properties to deteriorate to substandard conditions. At the same time however, the City's procedures provide property owners with opportunities to submit and implement plans to bring structures back into compliance. The City, through the office of the building inspector and through the support of Council to its citizen's requests for sponsorship, will assist in identifying and directing suitable projects to appropriate program for redevelopment and revitalization.

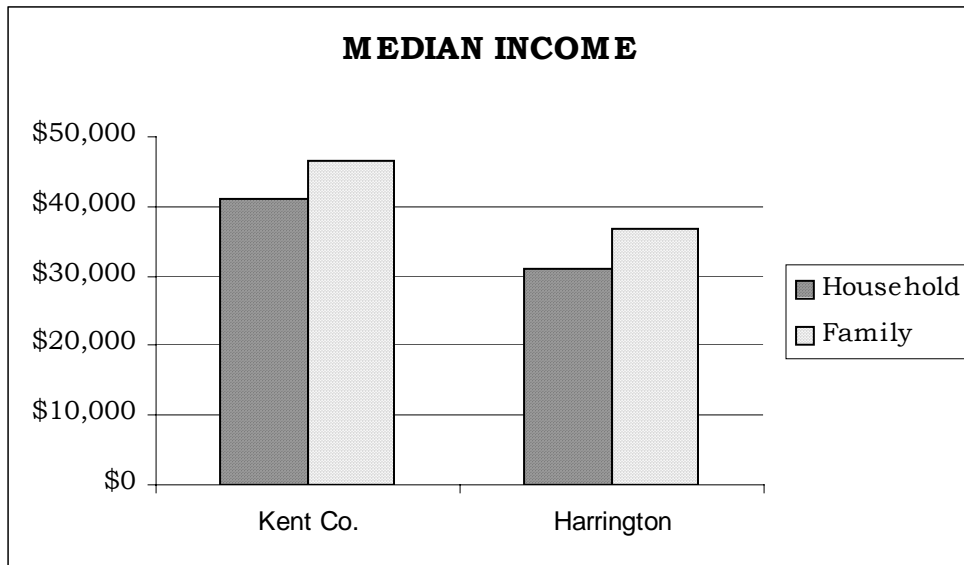
Economic Development Plan

See Pages 98-99.

Income

The median household and family incomes reported for the City of Harrington reflect the age, education and employment opportunities in the Harrington area. The median household incomes for the State, Kent County and the City of Harrington are, respectively: \$ 47,381, \$40,590 and \$30,945. Chart 3, below, compares median incomes of Harrington and the County.

Chart 3 Comparison of Median Incomes

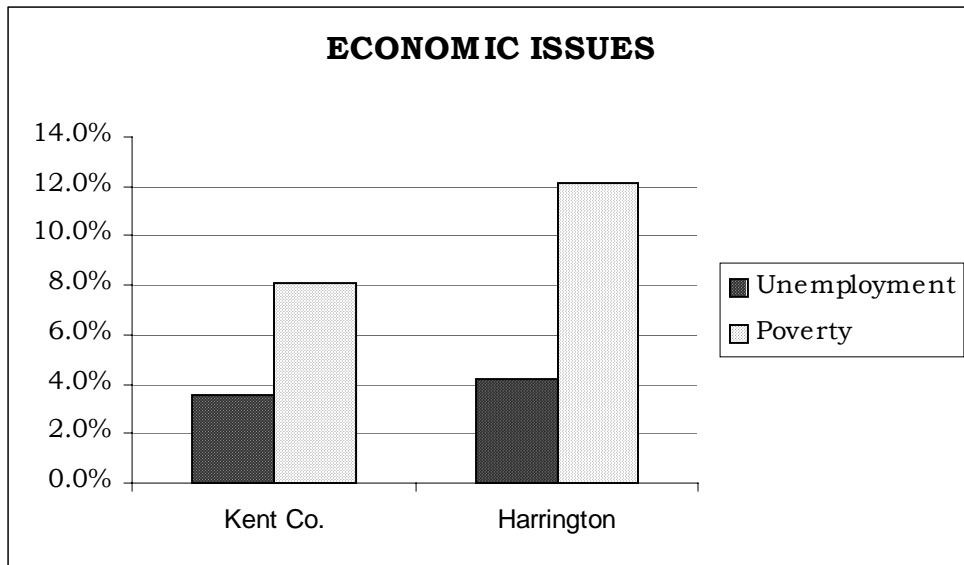


Source: U.S. Census 2000

The City of Harrington's median income values have increased since the 1990 census, however, the City still qualifies as a disadvantaged community because its median household income is below the median values of the State and Kent County.

Information provided by the 2000 census shows Harrington's population included a labor force of 1,498 persons, and an unemployment rate within that work force of 4.2 per cent. Chart 4, next page, compares other economic issues between Harrington and Kent County.

Chart 4 Economic Issues

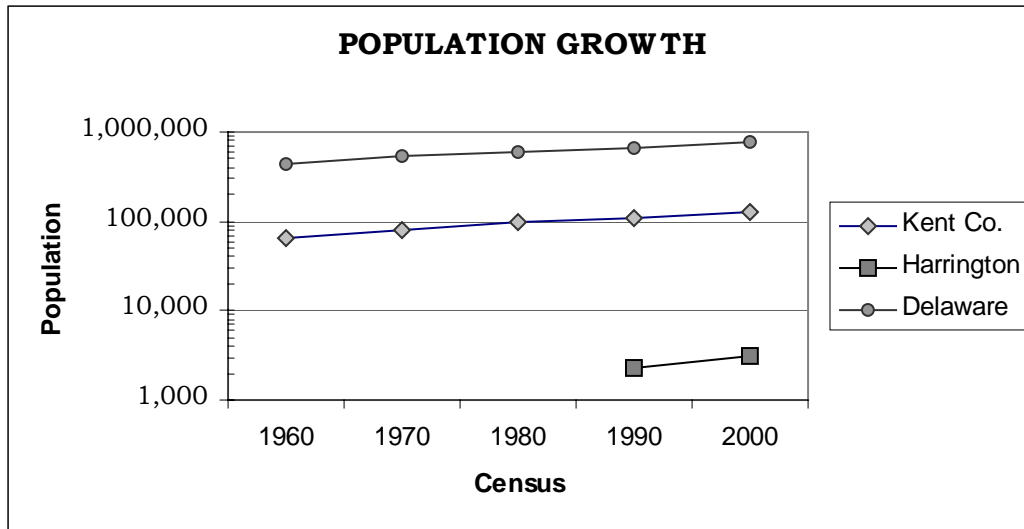


Source: Census 2000

Population

Current population of the City is 3,174 people, who live in 1,223 households. The population change since the 1990 census mirrors the County's growth through new development of lower cost housing and annexation, with a significant increase. Chart 5 shows the rate of growth for the State, Kent County and the City.

Chart 5 Comparison of Growth Rates



Source: U.S. Census 2000

The population of Harrington increased from 2,311 to 3,174 persons over the 1990's. The strong Delaware economy, the addition of the Midway Slots to the Fairgrounds and new housing opportunities within Harrington all contributed to Harrington's population growth as shown in Table 5.

Table 5 Recent Growth

	1990	2000	Change	% Change
Population	2311	3174	863	37.3
City Area	825 acres	1260 acres	435 acres	52.7

Source: U.S. Census 2000/City of Harrington

Population Forecast

A population forecast is tabulated below, calculated from Kent County and City of Dover forecasts generated by the Delaware Population Consortium (Sept. 2003, version 2003.0), and adjusted to reflect Harrington's previous growth rate as well as current conditions.

Past data shows the growth of the City trends in coordination with the growth of both Kent County and the State in general. The Consortium's projections are benchmarked to the 2000 Census, and include analysis of births, deaths and net migration into the State. The Consortium's forecasts show a slight reduction in the rate of population expansion for Delaware as a whole, reflecting the economy and the associated slow rate of job growth (the key component of net migration to Delaware).

The Consortium provides projections for a limited number of municipalities within the State. Harrington's past growth was influenced in part by the addition of a new business sector, the gambling destination at the State Fairgrounds. Now that the Midway slots are stabilized and newer gambling options are being developed in neighboring states, this influence will not be as great in the next ten years.

In the near term, Harrington is expected to follow the growth pattern of the more suburban and rural portions of the County. Harrington's population growth is expected to reflect new housing starts in current and future residential projects. Approximately 12 to 15 new housing units are

anticipated per year for the next five to ten years. This is equivalent to a 6 to 7 percent per 5-year projection period for the next ten years, which is in line with the rates for Kent County, excluding Dover, indicated by the Delaware Population Consortium.

The population projection for Harrington is provided in Table 6.

Table 6 Population Projection

Year	2005	2010	2015
Projected Population	3389	3564	3722
Increase in Population	215	175	158
Increase in Households	83	67	61

Projections for small populations such as those of Delaware's many small towns and cities are best applied with great latitude. Slight inaccuracies or data errors in the 2000 Census figures become large errors - either too great or too small - when projected into the future. However, these projections are useful for identifying future needs and developing strategies to meet them.

Most of the increase in population to the Harrington area will be the result of continued positive net migration. Births and deaths have been roughly equal for during the 90's and is expected to remain so into the foreseeable future. The number of people moving into western Kent County is estimated to be greater than those people moving away from the area. This net gain due to migration has been the trend for the past 20 years.

Population Growth and the Impact on the Wastewater System

Population growth for the City of Harrington will be the key factor in increasing demand on City services and infrastructure. As a wastewater utility, the City in particular must plan for the dual challenges of increasing demand for service and increasing environmental regulations related to

disposal of treated wastewater. Comparison of the population projections, annexation plan and land use plan, and permit modification now underway find the system will have the necessary capacity to serve the City and its foreseeable growth.

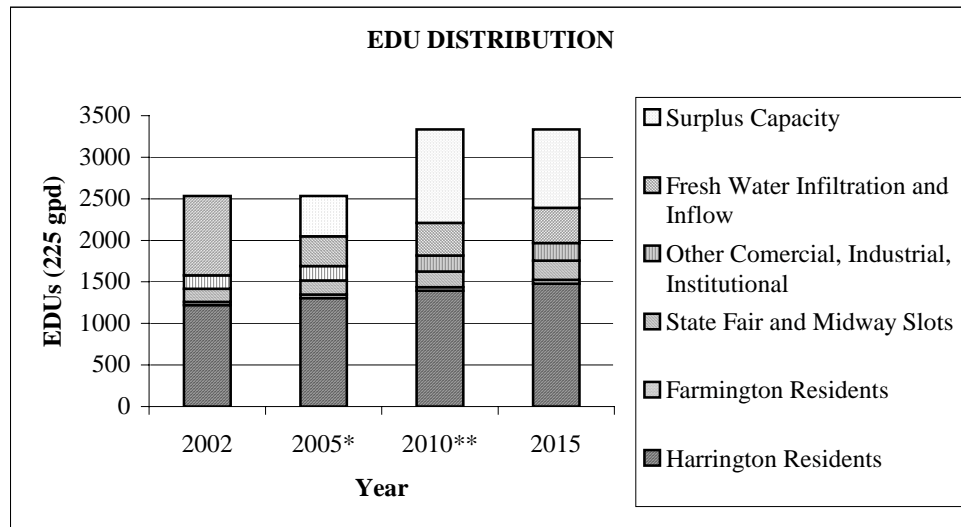
The wastewater system is discussed in detail in Chapter 8, however the population projection provided above is placed in context with the current and future permitted capacity of the wastewater treatment plant in Table 7 and Chart 6, below.

Table 7 Wastewater Demand Based on Population Projections and Land Use Plan

	Year 2002	Year 2005*	Year 2010**	Year 2015
Harrington Residents	1220	1307	1395	1478
Farmington Residents	40	40	42	45
State Fair and Midway Slots	156	169	187	231
Other Commercial, Industrial, Institutional	160	176	193	213
Fresh Water Infiltration and Inflow	956	356	392	426
Surplus Capacity	0	485	1,124	940

Source: City of Harrington, based on water metering and WWTP pump station metering.

Chart 6 EDU Distribution



Notes:

Source: City of Harrington

* Permitted capacity of 570,000 gpd or 2,533 EDU's

** Permitted capacity of 750,000 gpd or 3,333 EDU's

Table and chart units are Equivalent Dwelling Units (EDUs), used to relate sewer demand in gallons/day (gpd) to population and land use. One EDU is 225 gpd.

6 PUBLIC SERVICES

City Government

The City of Harrington Charter was consolidated, amended and revised significantly in 1993, and further revised in 1997. Under the Charter, the City is vested with the authority to own and operate public property, such as the water and sewer system, as well as roads and buildings. The City also has the power to enforce certain activities that provide for the general public safety and benefit, such as snow removal; maintenance of sidewalks, curb and gutter; regulation of landscaping of streets, parks and other public open space; and control of drainage. The City provides for the public safety, either directly or in cooperation with other agencies for police, fire and emergency medical services.

The City has the authority to conduct intergovernmental coordination for the public good, including joint financing or cooperative operation of facilities with other agencies.

Six City councilmen, who are elected from within distinct districts, represent the citizens of Harrington. The Council is the highest level of the executive body. Council members represent their districts for three-year terms and may serve no more than three consecutive terms. The six Council Districts are of nearly equal population, as determined by the decennial census. The Council districts were re-apportioned as part of the planning process in 2002 and were adopted by Charter amendment in June 2003. Figure 3B shows the current Council districts.

The Mayor of Harrington presides at the Council meetings and civic ceremonies. The Mayor also has the authority to act on behalf of the City during emergencies.

The City also utilizes a number of appointed positions and staff to perform the day-to-day operations of the City. Staff includes a Chief of Police, an Operations Manager, Clerk of Council, a City Planning and Zoning Commission, and Board of Adjustment, among others.

The Planning and Zoning Commission is responsible for hearing requests and making recommendations to Council regarding the combining, partitioning or land subdivisions, site plan review and zoning or re-zoning applications. The Commission is also empowered to require the dedication of land or easements, money in lieu of land, impact fees of other considerations for the public good as part of the process of subdividing land. An organizational chart for the City is presented as Figure 3A.

Under the Charter, the City has the right to annex any contiguous territory to its City limits where the property owner has petitioned for annexation, or where a vote among the affected property owners results in a majority in favor of annexation. The City may enter into an annexation agreement with the affected property owner(s) prior to the election which "...may address any matters which would be relevant to the subject lands, if annexed. By way of example and not in limitation, such agreement may address zoning, subdivision approval, tax relief, public utilities and public improvements."

Police Service and Fire Protection

The City of Harrington maintains a full-time police force of 9 officers. The Department works with the Delaware State Police, primarily through Troop 3 located in Camden.

The Harrington Fire Company Station 50 provides fire and emergency response for Harrington and the surrounding area. The City shares the salary requirements for 2 full-time EMT's with the Fire Company. Both EMT's are on-call at the Harrington Fire Company station as the Kent County Paramedic Station - South. The Fire Company actively pursues grants to maintain its level of service in a growing district. In late 2003 the Company was awarded a Fire Operations and Firefighters Safety grant from the Department of Homeland Security US Fire Administration.

The Fire Company moved into a new facility with access onto both Clark Street and Liberty Drive to better serve the community. The old fire hall has been converted to house the Police

Department.

Trash Collection

A local contractor under contract to the City makes garbage pick up once a week.

The City's only Recycle Delaware Center is situated at Center Street and Delaware Avenue. The Center accepts various paper, glass, plastic, and metal recyclables as well as batteries and aerosol cans.

Public Works

The City employs 6 full-time staff members for the Public Works department. This Department operates the water system, and maintains the storm water system.

Money received from the State for road maintenance is collected into a Street Funds Account and accumulated to provide funding for road maintenance and rehabilitation projects. The City Engineer develops a priority list for roadwork, which is updated when funding becomes sufficient to cost-effectively proceed with projects. Contractors selected by competitive bidding perform roadway projects.

Parks and Recreation

The City supports a primarily volunteer Parks and Recreation Commission. The commission is organized according to by-laws, with the approval of City Council. The City Council appoints the Commission chairman, and the City supports contract workers who maintain and supervise the City's growing number of recreational facilities and programs. Services include a youth center, soccer league and special outings and activities.

Harrington is located less than 6 miles from Killens Pond State Park and Water Park. Activities at the park include water pool and slides, in addition to the traditional camping, boat rental, and

fishing. Ball fields and a Frisbee golf course are also available to the public year round. The park's trails are used for hiking, biking and cross-country running.

Abbott's Mill Nature Center, located 5 miles to the southeast of the City on Abbott's Pond Road in Sussex County also provides various year-round arts and crafts programs for families and young children. During the Autumn at Abbott's festival, storytellers and musicians perform.

Community Development

Zoning Ordinance

The City's zoning ordinance was last updated in 1991. Currently, the City classifies land use through 5 residential zones, 3 commercial zones and 2 industrial zones.

In general, residential zones allow some agricultural activities with a single residence per parcel. R-1 restrictions apply to parcels with agricultural activities. R-1 Residential is single-family residence zoning that also includes institutional uses, including schools, transportation and public utilities. R-2 Residential includes single family and dwellings that serve multiple families, if the building is under single ownership. Uses acceptable under R-1 are also acceptable under R-2. Lot size under R-2 is small, which increases density and provides for lower-cost housing suitable for singles and the elderly.

R-3 Group Housing Residential is used for multiple family units with multiple owners, such as townhouses. R-4 Multi-story Apartment Residence covers rental apartment units with a single owner. Finally, the ordinance includes a classification specific to manufactured housing that is moved into the city and placed on a foundation. The MH Manufactured Housing classification does not include house trailers or tow-able mobile homes.

Commercial zoning is divided into three classifications. Neighborhood Commercial, C1, includes convenience stores, various personal services. Residence is permitted only for the owner or caretaker. Central Commercial, C2, includes all C-1 classification requirements and

adds business, professional or governmental offices, daycare centers, banks, theaters and restaurant activities, to name a few. Residence at the business is permitted but only for the owner or caretaker of the building. Finally, Service Commercial, C-3, includes activities such as dry cleaning, storage and warehousing, funeral homes, animal hospitals and motor vehicle sales and service.

To promote enterprises that may offer higher-paying jobs, the City provides for a Manufacturing -M classification. The zone permits assembly, alteration, finishing, cleaning, or processing of materials, as well as those involving the use of gas, oil or electricity for fuel. The zone includes laboratories, contractor's yards and public utilities. To protect the public interest, all activities within the Manufacturing zone are conditional upon approval by Council, through the Planning and Zoning Commission. Residences are not permitted.

To offer a consolidated area for commerce with access to the railroad facilities, the City of Harrington includes an industrial zone, with the specific Industrial Park-IMP classification. Site development within the zone is subject to review and approval of the Planning and Zoning Commission and City Council, and includes activities permitted under the Manufacturing zone as well as service commercial activities, among others. Residences are not permitted under the classification. Table 8 presents the acreage included within each of the zoning classifications.

Table 8 Zoning and Acreage

Classification	ID	Area (acres)
Residential-1	R-1	517
Residential-2	R-2	63
Group Housing	R-3	8
Multi-Story Apartments	R-4	42
Manufactured Housing	MH	131
Neighborhood Commercial	C-1	1
Central Commercial	C-2	14
Service Commercial	C-3	150
Manufacturing	M	175
Industrial Park	IMP	32
Unclassified Road R-O-W		127
	TOTAL	1,260

A summary of the classifications is tabulated in Appendix 5. The Unofficial Zoning map is shown as Figure 4A.

Zoning for individual parcels is tracked using an index card system call the Property Record Card. The cards are kept on file at City Hall. The City is in the process of reviewing the cards to confirm that zoning notations are current with re-zoning that may have taken place. The City is also in the process of transcribing the information from the cards to a computer database. The computer system will provide for ease of confirmation, updates and systematic back up.

Housing

Based on Census 2000 data, Harrington currently includes 1,341 housing units in a wide variety of housing options. Table 9 lists the types of housing units.

Table 9 Housing Options

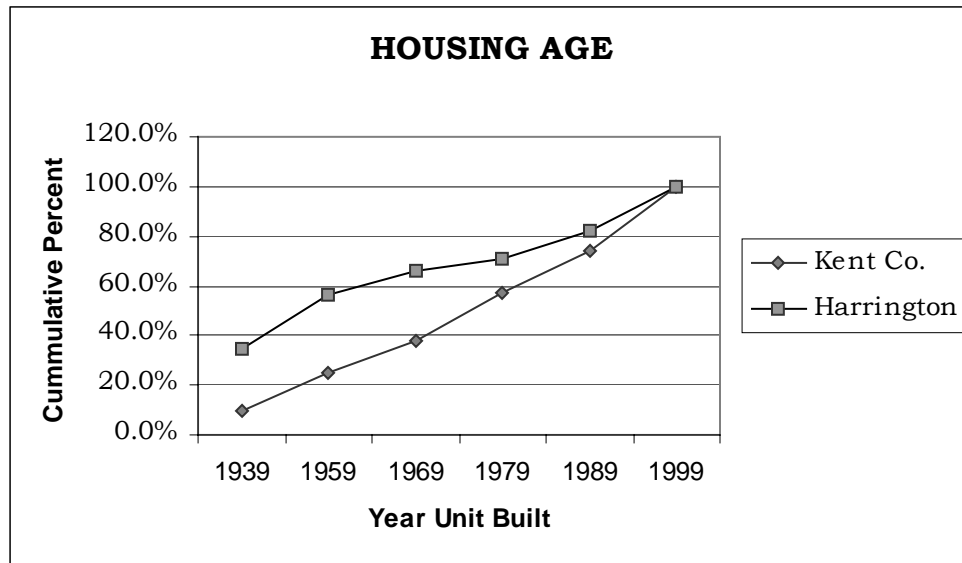
Housing Option	Units	Percent
Single Family	975	73%
Mobile Home	123	9%
Multi-Family	243	18%
Total	1,341	100%
Occupied	1,235	92%

Source: U.S. Census 2000

The Census reports that slightly more than half (674 of 1,235) of the housing is owner-occupied.

Chart 7, below, compares the age of the Harrington housing stock with that of Kent County as a whole. The steady slope of the Kent County line indicates a fairly constant addition of housing over the past 60 years. Both the Chart and Table 10 indicate how the age of the housing stock reflects Harrington's steady growth, as well as variations in the over-all economic climate within the United States as a whole. Few new units were added during the 1970's, a period of high inflation and interest rates, while significant numbers of new units have been recently added during the 1990's when interest and mortgage rates have been at very low levels and Delaware's economic climate has drawn new residents to the area.

Chart 7 Comparison of Housing Age



Source: U.S. Census 2000

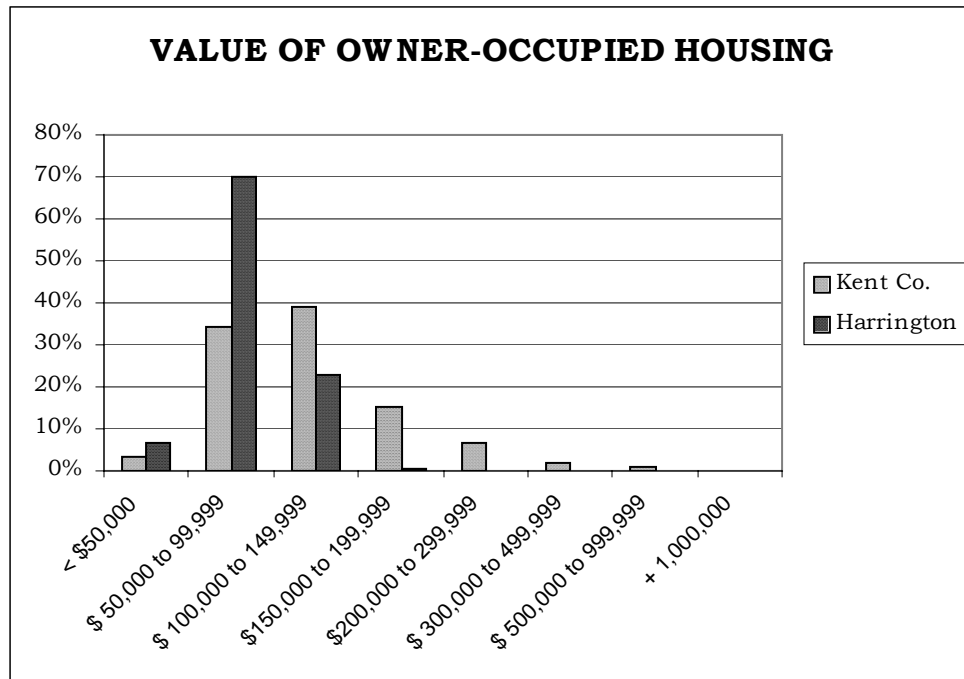
Table 10 Number of Housing Units by Age

Year Structure was Built	Number of Units	Percent
1990 to 2000	240	18%
1980 to 1999	154	12%
1970 to 1979	58	4%
1960 to 1969	10	10%
1959 or earlier	755	56%
Total	1,341	100%

Source: U.S. Census 2000

Housing in Harrington is affordable, relative to costs within the County, especially in areas that are tributary to Delaware's coastal communities or are adjacent to Toll Rt. 1 in the northern portion of the County. Of the owner-occupied units, 46 percent are not mortgaged. Housing purchase prices are generally under \$150,000 as shown on Chart 8.

Chart 8 Value of Owner-occupied Housing



Source: U.S. Census 2000

Demand for housing in Harrington's planning area is quite strong to the north and northeast of the City. Within the City few open lots remain, although minor subdivision of larger lots is requested regularly. The manufactured home park located south of Messicks Road is fully occupied.

Housing Opportunities

Existing homes within Harrington sell reasonably well, however, additional demand for new housing is growing. The City Planning and Zoning Commission regularly hears requests for conversion of existing structures to apartments, or reviews plans for minor subdivisions of larger lots for new construction. While interested in supporting new housing, requests for re-zoning from R-1 to higher density classifications is generally reviewed with the intent to maintain

neighborhood consistency in residential density. New subdivisions are being favorably considered in the vacant lands at the margins of the existing city limits. At the northwest of the City, an apartment complex, the first phase of the Friendship Village project, is designed with 168 units. The first building will be constructed with 36 apartments in 2004. Friendship Village will also include approximately 153 single-family homes and a small commercial area. To the east of US Route 13, one prospective medium density subdivision is in the preliminary planning stages. Property owners to the north and east of the City have expressed interest in annexation and residential development.

The City of Harrington is committed to providing affordable housing. According to the Delaware State Housing Authority 18 percent of the City's housing stock is multi-family units, most of which are subsidized for low- and moderate income households. It is the City's policy to provide for affordable housing through the use of appropriate residential zoning codes. The current zoning code is under review with the assistance of the Office of State Planning Coordination. Any revisions to the code will reflect the City's desire to include a wide range of housing choices, including multi family housing, mixed uses, manufactured homes, as well as single family units.

The City has chosen to specifically exclude mobile homes, as defined in Section 104-T of its code as part of its policy to promote community stability and health and safety.

The City will consider, as part of its review of the zoning code addition of manufactured housing as suitable within the R-2 zoning code, in order to encourage in fill development, as long as the housing style does not adversely affect the immediate neighborhood's continuity.

The City will consider, as part of its zoning ordinance review, reductions in parking requirements for senior housing under the R-3 and R-4 zoning districts, to both reflect the reduced need for parking by seniors. Reduced parking may be off set by additional open space requirements for walking trails or public park areas.

Currently, schools are acceptable uses in the R-1 and R-2 zones. The City will consider, as part of its review of the zoning code the addition of school facilities as suitable uses to the R-3 and R-4 zoning districts.

Finally, the City will consider addition of a mixed use/mixed density provision, either as an overlay zone or separate zoning district to promote variety in housing type and value in new sections of the City.

The City of Harrington recognizes that variety in housing choices, from multi-family and low-cost manufactured housing to single-family homes conveniently located near the City's schools and commercial enterprises, promotes steady and sustainable growth. The City intends to promote affordable housing through a variety of Residential Zoning options. Housing options should be capable of maintaining the character of Harrington's established neighborhoods, while providing enough lots to assure competition and many choices for prospective buyers. The housing stock provides a variety of income levels with suitable residences.

Land Use

Land Use was mapped in December 2002 by the City Council with assistance from the Office of State Planning. Figure 4B shows the existing land use within the City of Harrington.

The existing pattern reflects the City's commercial history and growth at the crossroads area of Commerce Street, Clark Street and the railroad. Regular grids of small, residential blocks radiate from the center. A new commercial pattern grew with the US Route 13 highway, and extends north and south along the highway within Harrington. Commercial use continues in the County in the same pattern. New residential development is emerging on the perimeter of the City, in subdivisions. The existing land use pattern forms a framework that can be built upon to promote new growth while discouraging sprawl in the surrounding County. The existing commercial enterprises can be promoted and new industries and businesses can be directed to the City's

industrial zone areas. The City has a compact and historic center that is potentially walkable and attractive.

Approximately 60 percent of Harrington's own-occupied housing stock is over 50 years old. The older neighborhoods have great potential for restoration and renovation by private owners. These neighborhoods are within walking distance to the historic City center and the local schools. Table 11 provides a break down of the land use with acreage, as mapped in December 2002.

Table 11 Current Land Use in Harrington

Current Land Use	Area (acres)
Low to Medium Density Residential	311
High Density Residential	29
Commercial	297
Industrial/Manufacturing	17
Institutional/Government	72
Public Utility	30
Transportation	134
Open Space and Parks	18
Transition	33
Vacant	55
Agricultural	165
Wooded	99
Total	1,260

Land use in the County surrounding Harrington is largely related to agriculture; however, residential use is growing. Small subdivisions and strip lots along the arterial roadways provide single-family home sites. The Fair Grounds, and Harrington Raceway directly south of the City form a significant area of Commercial-Recreational use that is likely to continue to expand. Commercial and light industrial use is aligned with US Route 13 to both the north and south of Harrington. Figure 4C shows the current land use for the planning area. Table 11 provides the current land use and acreage for lands within the planning area that are delineated for the 5-year annexation plan.

In general, the City's land use pattern and its current zoning map are coordinated, although an official zoning map should be compiled through a careful review of the Property Record data file. The current paper card format is being reproduced in a computer format that will provide for easy data entry, linking to GIS mapping systems and reliable back up.

Undeveloped and Open Space

The City of Harrington occupies an area of approximately 2 square miles. Most of this area is developed, however, the City includes approximately 0.6 square mile (29%) of undeveloped acreage and open space. Most of the undeveloped acreage located on the perimeter of the City, in parcels which have been annexed with the intent of development, but which remain for the time being, vacant (for example, mown grass or fallow), agricultural fields or woodlots.

Eighty-eight acres are undeveloped land that is vacant or under construction. These areas are considered probable for development within the 5-year time frame of this plan. Areas that are agricultural or wooded (264 acres) may be developed, depending on future economic conditions within the area and the State. The intent for these areas within the City is to be developed eventually, generally as residential subdivisions. Dedicated public open space within these developments will be desirable and required, for compliance with Kent Conservation District regulations and City ordinances, dependant on zoning classification.

Harrington's heritage as a railroad depot and business and market hub has left the City with little centralized open space for parkland or field-oriented recreational activities. The Harrington Railroad Museum, which is located on a portion of the railroad alignment, is an excellent example of innovative use of developed space for public education and enjoyment. If truck traffic through the historic center of the City is reduced, the area becomes more attractive as a pedestrian destination to take advantage of the existing museums and the future library location.

To address the need for active recreation, the City is currently working with St. Bernadette's Catholic Church on Liberty Street to operate soccer and other recreational fields. The playing

fields and playgrounds associated with the elementary schools and middle school on Dorman and West Streets are also available to the public when school is not in session.

Environmental Issues

Waterways and Drainage

The City of Harrington is located on the Atlantic Coastal Plain, near the drainage divide between the Chesapeake Bay and Delaware Bay. The divide is near Harrington's western town limits, and the City is within the Delaware Bay Drainage area.

The area exhibits 25 feet of topographic relief, with most of the area at 50 to 60 feet above sea level. The valley of Browns Branch and its unnamed tributaries rise to approximately 50 feet above sea level, from the valley bottoms that lie at 35 to 40 feet in elevation. Browns Branch and its tributaries in the Harrington area flow east, away from the City center for approximately 1 mile, and then bend north and northeastward to join the Murderkill River.

The Federal Emergency Management Agency (FEMA) oversees the national flood insurance program, floodplain delineation and flood elevation determinations. To participate in the insurance program, counties and municipalities must maintain ordinances that regulate development and construction within a floodplain. Harrington has had a Floodplain Ordinance in place since 1989. The ordinance was recently reviewed by DNREC Flood Mitigation Branch and was found to be pertinent and adequate. The Federal Emergency Management Agency (FEMA) as part of the Federal Flood Insurance Program has remapped flood plains in the Harrington area. The new maps show a significantly reduced 1% Chance Annual Flood (also known as the 100-year flood) Zone along the north tributary to Browns Branch, on the north and east side of the City.

The most recent updates to the Flood Insurance Rate Maps were issued in May, 2003. The map panels for Harrington are: 10001C0330, 10001C0337 and 10001C0341. Flood plains are shown on Figure 5.

Some areas on the western side of the City have limited drainage capacity for storm water, due to a combination of low slopes and undersized or un-maintained drainage structures. DelDOT had prepared a study (Phases I, II and III) to address drainage issues from Liberty Street to Mispillion Street. The City is continuing to integrate drainage improvements into transportation enhancement projects such as curb and sidewalk additions.

The water quality of Delaware's streams and rivers has been impaired by over 100 years of human activity along their banks. Today, water quality is recovering slowly, but more work remains to be done. Section 303(d) of the Federal Clean Water Act (CWA) requires Delaware to develop a list (the 303(d) List) of water bodies for which existing pollution control activities are not sufficient to attain applicable water quality standards. Based on actual measurements of water quality and reasonable expectations of potential water uses, the State must develop Total Maximum Daily Loads (TMDLs) for pollutants of concern. A TMDL sets a limit on the amount of a pollutant that can be discharged into a water body such that water quality standards are met.

DNREC's Total Maximum Daily Load (TMDL) program has been designed to divide the State into major drainage basins, and subdivide the basins into watersheds. Harrington is within the Delaware River Basin and its Murderkill River Watershed. The TMDL program for each watershed is directed to address both point sources and non-point sources for specific pollutants of concern within the watershed. Excess nutrients of nitrogen and phosphorous are identified as pollutants of concern for the Murderkill watershed.

DNREC has published a TMDL Development Process Schedule on the DNREC web site (see References). The TMDLs for the watershed were completed in 2002 and the Murderkill Tributary Action Team is currently soliciting public comment and ideas for the Pollution Control Strategy. The TMDL process and Murderkill schedule is shown as Table 12.

Table 12 TDML Development Process Schedule

	'96	'97	'98	'99	'00	'01	'02	'03
Delaware Basin - Whole Basin Management Plan								
Planning								
Preliminary Assessment								
Intensive Basin Monitoring								
Comprehensive Analysis								
Management Options & Evaluation								
Murderkill Watershed TMDL Schedule								
Planning								
Preliminary Water Quality Assessment								
Intensive Watershed Monitoring								
Model Development								
TMDL Development								
TMDL Review								
Pollution Control Strategy								

As the process continues, the “Murderkill Action Team” has invited stakeholders (municipalities, farmers, concerned citizens and industries) to provide input for the implementation strategies. The City of Harrington has participated on the team regarding wastewater disposal options including spray irrigation. Participation on the Team assures that the City’s interest in improving the local environment to the benefit of Harrington’s citizen’s is represented.

For non-point source nutrient issues, the City understands that the TMDL regulations require reductions of non-point source nitrogen (N) and phosphorus (P) of 30% and 50%, respectively. Most of the non-point source loads come from individual septic systems and fertilizer runoff and groundwater recharge of water enriched in nutrients by fertilizer applications that exceed plant uptake. The City Planning Commission is working with the Office of State Planning in reviewing and updating their Zoning and Subdivision Ordinances. As part of this process, the City will consider new regulations that may help achieve the watershed’s non-point source goals. Through its involvement with the Murderkill Tributary Action Team, the City will continue to support education programs for homeowners and agriculture to promote responsible use of fertilizers.

The City of Harrington's plan to upgrade the WWTP and expand capacity will allow for 1) limiting new on-site systems and 2) reducing the number of existing individual on-site systems. The City is actively participating on the Murderkill Tributary Action Team and has promoted the adoption of a recommendation to allow spray irrigation of effluent on lands in the agricultural preservation program. This policy forwards the replacement of applied fertilizer with nutrient bearing waters that otherwise would be discharged into the surface waters of the River system.

Additional information on compliance with the Murderkill TMDL program is included under Section 8 Sanitary Sewer System

Protections by Ordinance

Harrington's Zoning Ordinance currently has limited environmental protections for visibility, noise, odor, dust, vibration and light pollution. The ordinance currently requires vegetated buffer zones of a minimum of 25 feet between Commercial or Industrial zones and residential zones. In general, the Ordinance has no additional provisions for protection of environmental resources that are regulated by other agencies or are not currently regulated. However, wetlands are specifically called out as a resource to which all pertinent environmental regulations shall apply.

Wetlands and Wooded Areas

Wetlands are an important interface between the surface drainage systems and groundwater recharge points. Wetlands can buffer uplands from flood-prone areas and trap suspended sediment in stormwater run-off, before it can enter streams and ditches. Finally, wetlands provide important habitat for many of Delaware's popular game animals and native plant and animal species.

Wetlands are highly limited within the City and are most likely to be positively identified along the margins of Browns Branch and its tributary. Wooded areas within the City have been mapped under the National Wetlands Inventory as "Forested Wetlands," and are considered potential sites for wetlands, although no site-specific wetlands mapping has been completed

within these areas.

The US Army Corp of Engineers regulates non-tidal wetlands. All of the potential wetlands within the City of Harrington Planning area are non-tidal. Wood lots are not currently regulated by either the State or the County. The City Subdivision Ordinance prohibits removal of trees with a diameter of over 12 inches from a site without specific approval from the City.

Figure 5 shows the National Wetlands Inventory areas of potential wetlands and the FEMA 1% Annual Chance Flood Zones.

Air quality

No complaints or permit violations have occurred regarding odor or other air quality issues with the City's current wastewater treatment plan or water treatment operations. Proposed upgrade of the WWTP facility will not adversely impact the regional air quality.

Surface Water Resources

Browns Branch is a tributary to the Murderkill River and is currently the receiving body for effluent discharge at the WWTP site. The City is planning to upgrade the WWTP in order to reduce the amount of nutrients being added to the watershed.

In Delaware, most authority for environmental regulation rests with DNREC. For the protection of surface waters, Sediment and Erosion Control and Stormwater Management has been delegated by the State to the three County Conservation Districts. City of Harrington defers to Kent Conservation District in the permitting of construction protections and long-term stormwater management structures.

Groundwater Resources

The City of Harrington utilizes deep groundwater for water production. Groundwater recharge

areas are currently regulated only in New Castle County, however, DNREC will require all municipalities and both Kent and Sussex County to update their zoning ordinances with provisions for protection of excellent groundwater recharge areas by 2007. In addition, new regulations must be developed and implemented to provide wellhead protection around public water wells.

Areas where rainfall and snowmelt can readily recharge the groundwater have been mapped by the Delaware Geological Survey (see Figure 5, Conservation Areas). These areas should be protected with additional open space requirements or limitations on impervious surfaces.

Although Harrington does not currently utilize the shallow groundwater as a drinking water source, protection of the aquifer will enhance the quality of the City and surrounding areas. The City of Harrington WWTP upgrade will have the benefit of reducing the nitrate loading on the unconfined aquifer by offering an alternative to individual on-site septic systems.

Community Benefits

Transportation

Transportations issues were an important focus of the public discussion that identified the City's Comprehensive Plan objectives and goals.

Commuting and Transit Options

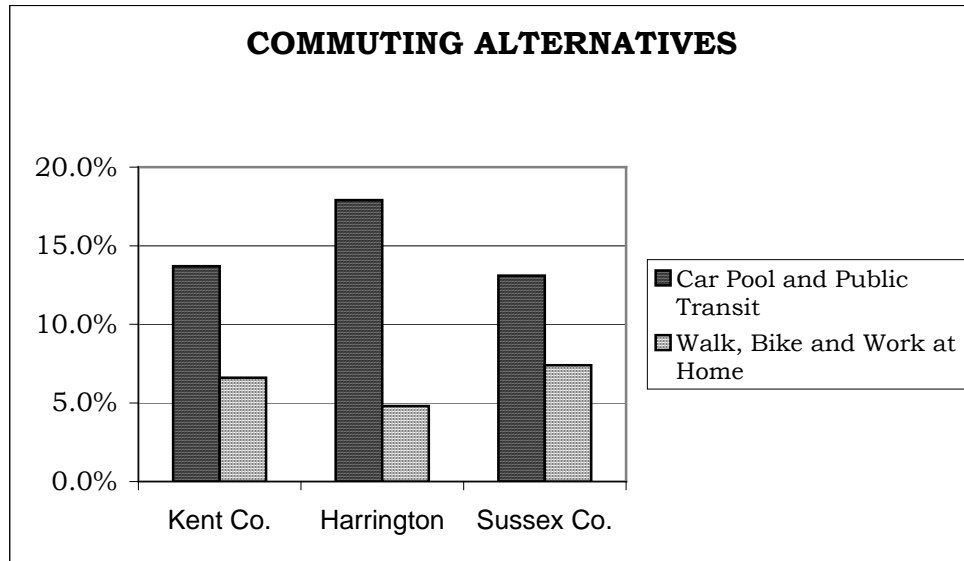
Harrington's work force is generally employed beyond the City limits, as shown by the statistics on commuting modes (see Chart 9, below) and travel times (see Chart 10, below).

Currently no DART bus routes serve Harrington. However, DART coordinates a Park & Pool lot at the Harrington Moose Lodge located approximately 1 mile north of the City on US Route 13. In addition, a DART First State shuttle is available through the Welfare to Work program between Harrington and Dover where it connects to the DART transit system at Mifflin Meadows near Camden (Bus Route 104). The shuttle pick up and drop off points include 5

locations within Harrington. The Shuttle stops at the Heritage manor Senior Housing campus. The Shuttle service is free however regular fares apply for the Route 104 service and transfers.

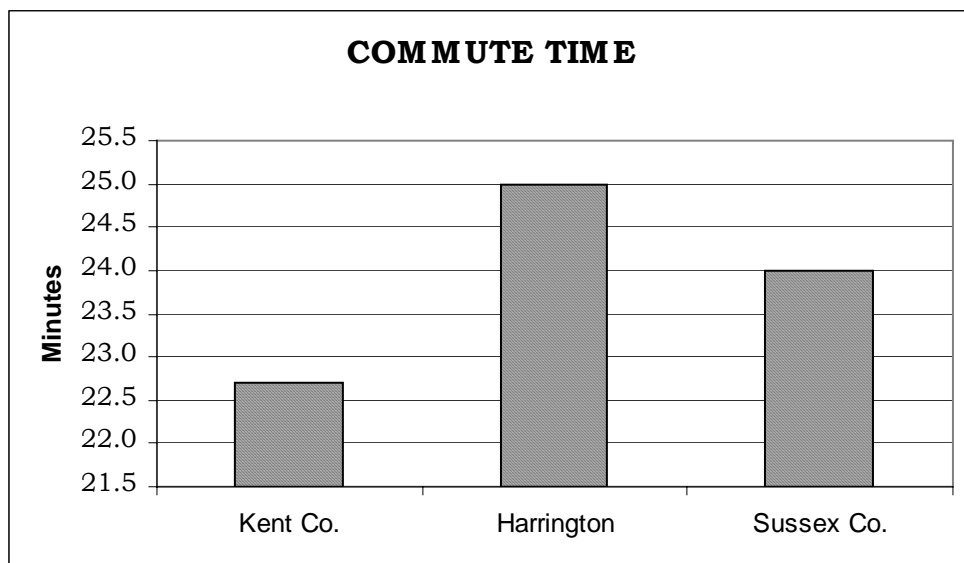
Paratransit service is available by appointment to eligible seniors, people with physical challenges, and kidney dialysis patients. Additional transportation options are available to residents on public assistance through the Delaware Division of Social Services. Transit is an important community element in Harrington where 13.5% of its citizens are senior citizens; 17.1% of the population between 5 and 65 years of age are disabled; and 10.4% of households do not have access to a personal vehicle.

Chart 9 Commuting Alternatives



Source: U.S. Census 2000

Chart 10 Commute Time



Source: U.S. Census 2000

Pedestrian and/or bike access to bus pick up points, local work sites, shopping and schools are important elements supporting the City's goal to optimize its transportation infrastructure. DelDOT's "Long-Range Transportation Plan" includes seven strategies for Delaware's transportation future. Strategy 1 is to target investments into designated growth areas. The City of Harrington is identified as an area of "multimodal investment." This strategy area is proposed to make transportation components such as public transit, walkways, and bikeways as efficient, convenient and safe as possible.

The City fits well into the State's public transit system. The City's location at the junction of US Route 13 and DE Route 14 make it a good choice for future expansion of the regular DART service.

Sidewalks line most of Harrington's interior streets. The City has a long-term commitment to improved pedestrian safety and convenience. Transportation Enhancement funding has been used to complete sidewalks on the west side of town in the vicinity of W.T. Chipman Middle School and South Elementary, as well as along Clark Street. Prioritization of sidewalk projects has generally considered the pedestrian traffic moving to and from the primary schools within the City.

Roadways

Harrington's roadways, especially those within the center of the City have their origins in the original Clarks Corner Settlement. While the layout of the roads is much the same as in the 1800's, the use and demands on those roadways have changed dramatically. Growth around early American wagon trails and the 19th century railroads has lead to a road layout that radiates in systematic blocks from a chaotic central meeting place of many ways.

The City maintains most of the interior roadways. The City's responsibility includes approximately 60,000 linear feet of roadways. The State maintains the main thoroughfares, including US Route 13 and DE Route 14, as well as Center St, West St., Liberty St. and Dorman

St., among others. Within the City, the State is responsible for approximately 47,000 linear feet of roadways.

Truck Traffic

Delaware Route 14 is a main east-west arterial road across Kent County and therefore generates significant traffic through town. Truck traffic along this route had been identified as a problem in the City's initial Comprehensive Plan, and by other planning studies conducted by DelDOT. Turning radii within the historic center of the City are inadequate for smooth flow of heavy vehicles, and cause traffic back ups regularly. At the same time, truck traffic through the City's center has a detrimental effect on historic structures.

DelDOT has developed an alternative route for truck traffic that is supported by the City. The route should facilitate truck routing moving east-west around Harrington. The proposed route would direct truck traffic to the south of the city center, and include upgrading Farmington Road and Tower Hill Road through lane widening, addition of shoulders, as well as improvements to a variety of intersections, including closure of median breaks, addition of acceleration lanes, upgrade of railroad crossings, among other items.

The Truck Route Study Project Development Report (PDR) was published in March 2001 and the utility survey along the proposed improvement sites was completed in November 2002. The schedule included in the PDR anticipated Preliminary Engineering for the project completed in 2002-2003, Right-of-Way acquisition occurring in 2004 and Construction proceeding in 2005-2007. The Capital Transportation Program released in July 2003 by DelDOT budgets \$400,000 in 2004 and \$6,750,000 in 2005 for the project.

Health and Medical

The City of Harrington includes a number of private businesses dedicated to serving the area's health care needs. The City includes two doctors offices for general practice, a physical therapist, a satellite lab owned by the Bayhealth network and associated with Kent General Hospital, and an eye doctor's office. The City does not currently include a dentist's office.

Both Milford Memorial Hospital and Kent General Hospital (located in Dover) serve the Harrington area and are located 15 miles and 8 miles away, respectively. In addition, numerous specialty practices are located in Milford.

Senior Services

The Harrington Senior Center is a non-profit organization that provides free services Monday through Fridays, during business hours. Services include nutrition, counseling and recreational activities. Heritage Manor is a senior housing campus located on West Street. The housing complex features single-story, handicapped accessible units with additional services, including a transit stop by the free Harrington Shuttle service operated by DART.

Public Library

The Harrington Public Library opened in 1978 in a small trailer. Today, the library is located in a residential neighborhood on E. Center Street. The librarian is an employee of the City.

The library houses a Delaware collection of local publications highlighting Harrington and early Delaware life, a children's collection and fiction, nonfiction and reference materials. Although the library building is small, the Harrington Public Library is part of the integrated KentNet automated catalog system that links Harrington's collection to those of the Dover, Smyrna and Milford libraries as well as the Wesley College Library and new Kent County Library. The library is open to the public Monday through Saturday.

The Library was a founding member of Heritage Day in Harrington. The event, celebrated annually, began as a first anniversary celebration for the Public Library and the Greater Harrington Historical Society.

A fund drive is underway to re-locate the library to the City center, to a location on Fleming Street, near the Harrington Museum and City Hall.

Local Schools

The City is located in the center of the Lake Forest School District, one of the fastest growing districts in the state. The Lake Forest School District is administered by the Lake Forest Board of Education. Funds are provided through a school district tax, which is collected in conjunction with Kent County property taxes. Three Lake Forest schools are located within the City, as shown in Table 13.

Table 13 Local Public Schools

South B Elementary	Pre -K
South Elementary	K to 4
<i>Central Elementary (located in Kent Co.)</i>	<i>5 to 6</i>
W.T. Chipman Middle School	7 to 8

The W.T. Chipman Middle School is also for public meetings and is used as the local polling place during County, State and National Elections.

South Elementary is rated “Superior.” W.T. Chipman Middle School is rated “Academic Review” for 2002-2003 school profiles on the Delaware Department of Education website.

The Lake Forest High School is located in the Town of Felton.

Higher Education

Completion of educational training after high school is a key element to improving employment opportunities. Harrington’s young population is benefited by the City’s location within a hour’s drive of seven Delaware college campuses. Local colleges are shown in Table 14, below.

Table 14 Colleges and Universities

Institution	Location	Distance (miles)
Wesley College	Dover	17
Delaware State University	Dover	18
Wilmington College	Dover (2 sites)	19
	Georgetown	23
Delaware Technical and Community College	Dover	18
	Georgetown	23
University of Delaware College of Marine Studies	Lewes	26
University of Delaware	Newark	54
Goldy-Beacom College	Wilmington	60

Wesley College is a private college offering associate and baccalaureate degrees, as well as a Master of Science in nursing degree. Delaware State University is a fully accredited, four-year college that offers Bachelor of Arts, Bachelor of Science, and Master's degrees in a variety of disciplines. Delaware Technical and Community College offers associate degrees, diplomas, and certificates in a variety of specialized areas at campuses in both Sussex and Kent County.

Wilmington College is an attractive educational option for residents with work and or family responsibilities. The College system provides flexible, non-residential courses with undergraduate and graduate degrees. The College has open-admission policy with classes at convenient locations and times. In Dover, courses are held at either the new Wilmington College facility on US Route 13 or at Dover Air Force Base. Wilmington College is also located on the Delaware Tech campus in Georgetown. A College Information Center is open in Rehoboth Beach.

Finally, the University of Delaware offers parallel programs with Delaware Technical and Community College for students to pursue degrees in criminal justice, engineering technology, and technology management. The University of Delaware system includes a specialty campus in Lewes, for the College of Marine Studies.

City History and Culture

Today Harrington's geographic and public services are still centered about the railroad junction site. Harrington is included as a "Railroad Town" in the Industrialization and Capitalization 1830-1880 time period in the Management Plan for Delaware's Historical Archeological Resources.

Three areas of the downtown have been delineated as potentially eligible for the National Register. The largest is the historic center of the City, identified as the Harrington Historic District.

The Harrington Historic District could extend along Delaware Avenue and Railroad Avenue. The district is described as being generally bound on the north by North Street and Simmons Road and to the east by Delaware Avenue, on the south by Reese Avenue and on the west by West Street. Of specific interest are Calvin, Dorman and Commerce Streets. The area's qualification is its representation of urbanization and early sub-urbanization of the 1880 to 1940 time period. The density of buildings has not altered since its development and the potential district retains much of its physical integrity.

To the east of the railroad, the potential Clark Street Historic District was delineated. The area includes both sides of Clark Street and some adjacent properties on side streets from East Street on the west to Dixon and Simpson Streets on the east. This area is similar to the Harrington Historic district as an example of early suburbanization with single family residences and a small number of commercial properties. The architectural styles include Colonial Revival and Bungalow. Most of the buildings have changed very little and the district retains its physical integrity.

The third district lies in the southwestern quadrant of Harrington and is designated the Harrington African-American Settlement Historic District. The district is west of West Street, and is bound on the north by the properties along Mispillion Street, to the west by the City limit and to the south by properties on Milby Street. This district includes the social components of a

self-contained community, including religious, educational and residential buildings associated with a black community isolated by institutionalized segregation.

Figure 6 shows the potential districts within the City. Appendix 4 includes a listing of historic structures of Harrington

The Greater Harrington Historical Society is dedicated to preserving the knowledge of the City's history and culture as a transportation and agricultural center. The Society is composed of volunteer members, a board and maintains a part-time clerical employee. The Society's office is located on Liberty Street in the historic town center.

The City also boasts museums that reflect the history and growth of the community. The Harrington Railroad Museum is located on the tracks at Clark Street. A highlight of the Railroad Museum is the 1926 Pennsylvania Railroad caboose that is open for visitors. The museum offers a glimpse into how the train crews lived and the tools that they used when the Delaware Railroad was the key transportation corridor in southern Delaware. Also on-site are: a watchman's tower with equipment to switch the tracks, lanterns, old phones, and a "message stick," used to grab messages off poles as trains moved through the depot. The tower is one of the few remaining on Delmarva. Working freight trains still pass right by the museum.

The Harrington Museum is located on Fleming Street, within walking distance of the Railroad Museum. The Museum is housed in two buildings, one of which is an 18th century Episcopal Church. Exhibits at the Harrington Museum display the artifacts of the 19th century, including a glass hearse carriage, circa 1800, with a display of funeral attire. The museum exhibits tell stories about harness racing, the local fire company, military veterans, traveling salesmen, and rural home life.

From the town, the Messick Agricultural Museum takes the visitor into Harrington's rich farmland with a private collection of antique John Deere tractors and farm equipment.

The City of Harrington recognizes that much of the physical plan and community development is a reflection of its history. Preservation of the physical artifacts that relate to its history, as well as preservation of the agricultural economy within the County lands surrounding Harrington will maintain and enhance the appeal of life in the City and will continuously remind its citizens of their community's past.

Harrington is fortunate to have the Greater Harrington Historical Society dedicated to history and its preservation. The City will continue to support historic preservation through recognition of the accomplishments of the Historical Society, and provision of City services when possible to support the Society's events and functions. The City is a willing participant in the annual Heritage Day festival.

Although the City does not intend to impose historic preservation by ordinance under this Comprehensive Plan, the City Council will work with property owners or private groups to recognize properties that are of significance to the Nation, to the State of Delaware or to the community. If requested to assist private preservation efforts, the City will support property owners' requests for federal funding for historic preservation or designation of the potential historic districts.

Figure 6 shows the locations of the public facilities of the City and areas of cultural or historic interest.

7 PUBLIC WATER SYSTEM

Water Supply

Harrington utilizes 3 DNREC-permitted public water supply wells, each with disinfection, a 250,000-gallon water tower and various sizes and materials of water main for its water service.

The City's water supply comes from the Frederica aquifer; a deep, confined sand horizon which is naturally protected from surface contamination.

Well ID	Permit No.	Aquifer	Depth below Ground Surface (ft)	Capacity (gpm)
Well No. 1	10197	Frederica	240	147
Well No. 2	10196	Frederica	240	222
Well No. 4	156225	Frederica	240	400

Well No. 3 is not in service and is not currently included in the City's allocation permit. The City's newest well is Well No. 4, constructed in 1998. Water treatment is chlorination at each well.

Existing Well Capacity

Current water production capacity is approximately 922,800 gpd. Peak water demand during the drought summer of 2002 was approximately 700,000 gpd. The City regularly compares water sales with metered water production to monitor leaks and meter malfunction. The City works with the Delaware Rural Water Association for specific leak detection programs.

Water Storage

Water storage capacity is 250,000 gallons within one (1) 5-leg-style water tower.

In addition, a proposed 500,000-gallon elevated-storage tank would provide additional

emergency and fire flow storage. The additional storage will also benefit the residents by improving pressure to areas on the west side of City during periods of high flows.

Water Distribution System

Water mains are upgraded as funding becomes available. Water main along Clark Street and East Street were recently upgraded. New water service interconnections were added to the Fairgrounds complex and to commercial properties on the east side of US Route 13.

Water service interconnection has been investigated with the Town of Felton, located 6 miles to the north on Harrington on US Route 13. The project was not completed due to funding limitations.

According to the latest map available (March 2001), the City's CPCN is out-of-date, compared to its current water service territory and City boundary.

Distribution Capacity

Older portions of the City's water distribution system are often piped with galvanized steel pipe with nominal diameters of 2- and 4-inches. These pipes are part of the original system and do not meet current State of Delaware Fire Marshal requirements for new construction. New water main is installed at a minimum diameter of 6 inches. As shown on Figure 7A, the majority of the under-sized network is located on the west side of the City's original center.

The small-diameter water mains have served their purpose for over 50 years and are now of questionable structural integrity. Old galvanized steel is susceptible to leaks due to corrosion and pitting.

8 SANITARY SEWER SYSTEM

Current Sewer Ordinance

The City of Harrington is the only municipality in Kent County that provides wastewater collection and treatment for its citizens, as well as for property owners beyond its current city limits. For discussion of wastewater issues, an Equivalent Dwelling Unit (EDU) is considered 225gallons/day (gpd).

The City of Harrington maintains a Sewer Ordinance (Ordinance No. 99-03) assuring that all properties within the City or annexed to the City which generate wastewater are connected to the municipal sanitary sewer system. No privately owned systems are permitted within the City. Service to users beyond the City limits is permitted. The Ordinance specifies rates based on EDUs defined in the regulation as 225 gpd.

Under the ordinance, sewer service charges are assessed quarterly. The sewer rate structure is based on fixed and variable charges. The fixed charges are determined to be sufficient to reimburse the City of O&M improvements to the system and retirement of bonds or other debt associated with these improvements. The variable charges are set to cover the costs for maintenance of sewer service lines and the administrative accounting costs.

New construction or upgrades that are needed for new subdivisions or commercial sites are the responsibility of developers under the ordinance. In order to accept future increases in wastewater volumes, new construction, system improvements and/or repairs to the gravity system will be necessary, dependent upon the location where development occurs, however EDUs are not formally allocated at annexation or via site plan approval. Anticipated upgrades by potential developers in the Annexation Plan area are described in Chapter 11.

Impact fees are assessed for each new connection to assure that debt service on improvements, environmental compliance and expansions are proportionally born by all citizens who receive the benefits of those improvements. Impact fees are reviewed annually to assess the changes in debt services. The current ordinances and the review procedures contained within the ordinances are

appropriate and adequate to support the City's goal of sustainable growth and prudent financial management of the wastewater facility.

The City also has established an Industrial Pretreatment Ordinance. This ordinance provides a definition of allowable waste and with the authority to limit wastes that can harm the sewer system, the treatment plant or Browns Branch, the receiving waterway's environment.

The ordinance authorizes the City to inspect, measure and sample industrial waste streams entering the system, and to compel pre-treatment of industrial waste. Industrial users are routinely checked for TSS, BOD, oil and grease, and other constituents as deemed appropriate by the City

Sewer Collection System

Harrington's sanitary sewer service area includes the City proper and areas beyond the city limits. Wastewater is processed for the Delaware State Fair Grounds including the Harrington Raceway's Midway Slots facility and the Town of Farmington. Other, limited areas adjacent to, but not within, the municipal boundaries of Harrington and Farmington are also served. Figure 7B shows the general system plan and location of pump stations.

Within the City of Harrington, service is provided through 8, 10, 12 and 15-inch gravity sewer mains. These mains collect the wastewater generated and convey flows to one of several pump stations.

Presently, there is only one sewer crossing under the railroad that conveys all flow from the west side of the city to the east where the WWTP is located. This crossing operates in a surcharge condition during periods of high flows. Development occurring west of the railroad tracks will require an upgrade of this crossing or routing of flow to the collection system downstream of this crossing.

The City owns and operates five pump stations to provide service within the City of Harrington. These pump stations with their associated capacities are listed in Table 15.

Table 15 City of Harrington Wastewater Pump Stations

LOCATION	Peak Flow (gpm)	Pump Station Operating Point	Force Main Diameter	Length (feet)
N. Calvin Street	14	30 FT TDH @ 60 gpm	2"	50
Clark's Corner	43.5	70 FT TDH @ 60 gpm	3" 4"	45 2050
Misphillion Street	50	25 FT TDH @ 60 gpm	2"	40
Smith Avenue	30	25 FT TDH @ 60 gpm	3"	800
Second Avenue	37.5	30 FT TDH @ 60 gpm	2" 4"	36 810
Main Pump Station (at WWTP)		55 FT TDH @ 1100 gpm	8"	315

Town of Farmington Network

The City of Harrington, under a cooperative effort with DNREC, completed an expansion of Harrington's collection and transmission facilities in 2000 to provide a collection system within the Town of Farmington. The Town is home to approximately 75 persons.

The collection system in Farmington consists of 8- and 10-inch PVC gravity sewer mains that direct the raw wastewater to a pump station located on School Lane in Farmington. The pump station is rated at 150 gpm against a total dynamic head (TDH) of 104 feet. Flows from the pump station are then conveyed through a 6-inch force main extending along the shoulder of State Route 314, Farmington Road. The force main then discharges into the City of Harrington's gravity collection system near Commerce Street. The City has no plans to tie in users along the force main route to the Harrington system.

Delaware State Fair Grounds and Midway Slots Connection

The Delaware State Fair is served by its privately-owned collection system, pump station, and force main. The force main from the Fair discharges to the southern termination point of the City's gravity collection system located in the median of U.S. Route 13. Currently the Fair flows at an average daily flow of 35,000 gpd. The City has an agreement with the Fair to accept up to 60,000 gpd of wastewater, once the treatment plant permitted capacity is increased to 570,000 gpd in 2004.

Collection Capacity

The existing collection system is sized to include the necessary capacity for the existing demand and any relatively small increase in usage at the City's center. Even so, for older areas of the Harrington sewers, problems with groundwater infiltration and surface water inflow (I &I) periodically consume not only the collection system surplus capacity, but also impact the operations of the pump stations and wastewater treatment plant.

These problems have been investigated for different portions of the system beginning in the spring of 1996. So far, the investigations have confirmed that the infiltration to the system is related to wet-season, high groundwater table. Field investigations point to a major point source (such as a major pipe or joint failure) as well as a combination of city-wide conditions and factors.

While seasonal, high groundwater table regularly contributes water into the collection system inflow of stormwater is also a significant concern. Flow can increase quickly by a factor of 5 during significant storm events. When the system is already carrying addition volumes due to groundwater infiltration, the I&I becomes severe during storm events.

The City's collection system has several pump stations that convey sewage via force mains to downstream gravity mains. The gravity collection system is of adequate size and is able to handle the existing flows including the addition of I&I.

However, reductions of I&I will free additional capacity in the existing collection system. In 2004, the City will clean and televise the sewer system. Once televised, the condition of the sewer mains can be evaluated and sections of the system would be replaced or repaired in order to eliminate problems.

The Town of Farmington was added to the Harrington System in a cooperative project with DNREC in 1998 with a modest surplus capacity in the design for future growth or emergency connections. The system was designed to pump wastewater to the Harrington WWTP by a pump station with a 54,000 gpd peak capacity and 45,000 gpd average daily flow. The design flow is equivalent to 150 EDU's. Farmington's population actually declined according to the 2000 census from 122 to 75 persons. The wastewater system currently is handling less than 40 EDU's.

Harrington accepts wastewater flows from the State Fair Grounds and Midway Slots by a long-term agreement that was recently amended. After final acceptance of the most recent WWTP upgrade, the Fair Grounds agreement will permit a maximum wastewater discharge to the Harrington system of 60,000 gpd or 200 EDU's. The Fair is not expected to reach this flow volume within the 5-year planning period covered by the Comprehensive Plan. Projected growth in the Fair wastewater flows is tabulated in Chapter 5, as Table 7.

Wastewater Treatment Plant

The City of Harrington Wastewater Plant is located south of Delaware Rt. 14 and east of US Route 13, within the City limits, as shown on Figure 7C. Raw wastewater (influent) arrives at the plant site and is pumped through the main pump station to the following systems: aeration lagoon, facultative lagoon, the wastewater treatment plant for chemical addition and dissolved air floatation, chemical addition and filtration, chlorine contact tank for disinfection and hence to the discharge point at Brown's Branch. The City's wastewater plant has been upgraded with additional aerators and a new filter to complete the requirements of a consent decree with DNREC. This work was completed in September 2001. The filter installed is currently being evaluated. Problems persist with plugging of the filter media. Changes to chemical dosages may

be required to eliminate these problems.

The treatment plant discharges the treated water to Brown's Branch, a tributary stream to the Murderkill River. Capacity of the plant is regulated by the NPDES permit, which dictates the volume of treated water discharged into waterways or the area drainage. After documentation of the upgraded treatment capabilities is submitted to and approved by DNREC, the City will be able to increase its permitted discharge capacity from 492,000 gpd to 570,000 gpd.

Current Treatment Capacity

Currently the wastewater treatment plant and its existing permits can support peak wastewater flows from the service territory and surplus capacity should normally be available for continued growth of the service territory. However, significant inflow and infiltration of fresh water (I & I) adds to the volume of influent entering the treatment facilities. Generally, a limited amount of I&I is anticipated, but significant storms or extended periods of high groundwater table has forced the plant to operate with higher discharge volumes than currently permitted. Table 16, below, shows the current capacity in EDU's and the various contributions to the waste stream.

Table 16 December 2002 Wastewater Contributions

	Residential (EDU's)	Commercial/ Industrial (EDU's)	I & I (EDU's)	Total
City of Harrington	1221			1,221
Town of Farmington	40			40
State Fair and Midway Slots		156		156
Commercial/ Industrial		+/- 160		160
Seasonal Groundwater/Stormwater			1,145	1,145
TOTAL EDU's				2,722

* I&I volumes in 2003 reflect both the higher than average precipitation and extended high-groundwater levels.

Sludge Disposal

The purpose of wastewater settling and biological aeration is to remove organic matter and to concentrate it in a much smaller volume for ease of handling and disposal. Sludge is the by-product of these treatment processes. When dewatered or dried, sludge is readily transported and can be sold as a soil amendment. Various forms of sludge are routinely placed on agricultural fields.

The City and Kent County both have a shared interest in economically disposing of the sludge by-product and the two governments executed the Biosolids Handling Agreement in October 2002. Sludge from the City's treatment plant is transported to the County plant in Frederica where the County produces a salable product, KentOrganite." The County will be allowed to utilize a farm west of Felton for sludge disposal, where the City of Harrington holds an active sludge disposal permit. The agreement provides both parties with more cost-effective sludge disposal options and additional sludge disposal capacity.

Future Wastewater Treatment Capacity

Based on year 2000 population data, and billing for the Fair Grounds and other large industrial and commercial users, average daily wastewater flow is 394,000 gpd, including approximately 10% inflow and infiltration across the system. Once the current upgrades to the plant are accepted and able to produce results required for documentation of performance, the plant permit capacity will be increased to 570,000 gpd.

Actual I & I flows vary significantly for dry weather and wet weather flows. Flows during the drought of 2002 were lower than the above flow approximation, (306,800 gpd - average monthly flow during February 2002), whereas, flows greatly exceeded the approximation in wet weather months (612,300 gpd - average monthly flow during December 2002). In order to provide capacity projections it must be assumed that I&I problems will be corrected.

Table 17 Capacity for Future Growth

	Year 2002 (gpd)	Year 2005* (gpd)	Year 2010** (gpd)	Year 2015 (gpd)
Harrington Residents	274,660	294,050	313,788	332,653
Farmington Residents	9,000	9,090	9,545	10,022
State Fair and Midway Slots	35,000	38,000	42,000	52,000
Other Commercial, Industrial, Institutional	35,940	39,534	43,487	47,836
Fresh Water Infiltration and Inflow	257,700	80,000	88,000	96,000
SURPLUS CAPACITY	0	109,326	253,180	211,489

* NPDES Permit is an average daily flow of 570,000 gpd.

** Land Treatment System and NPDES Permit is an average daily flow of 750,000 gpd.

The December 2002 flows to the WWTP were 612,300gpd including significant I&I. Improvements to the collection system planned for 2004 and 2005 will reduce the I&I load and provide capacity for new flows from residential or business expansion.

Based on environmental and cost comparisons, the City's Wastewater Facilities Management Plan recommended that spray irrigation be pursued to meet the TMDL requirements and to serve the future projected needs for the City of Harrington.

This alternative will require close coordination with Kent County and DNREC for the disposal of wastewater through spray irrigation on the lands of the County's sludge farms (Blessing Farm). In return for utilization of the sludge farms, the County will also benefit from the removal of the nutrient load currently added at the Harrington WWTP stream discharge point. The County may be able to claim the TMDL credit for the pounds of pollutants removed from the watershed by eliminating or decreasing the amount of pollutants discharged by Harrington to the Murderkill River Basin.

The expansion of the existing WWTP facility will not result in loss of farm land. The expansion project area for alternative maintaining stream discharge is located entirely on the existing WWTP site. For spray irrigation alternative, a force main would be extended along

Route 14, then continuing along Killens Pond Road. The force main would be within existing state right-of-ways. The project work is confined to the existing WWTP site, and no impact to historical or archeological properties will occur.

No transportation facilities or increase in traffic flows around the existing WWTP facility will be generated by the expansion.

No noise impact is anticipated with this project. A building is proposed to house the air blowers, mitigating the noise from these machines is proposed for Category 1 improvements. With the exception of the blower building additions, no change to the existing visual landscape will result from the expansion of the WWTP facility. The existing lagoons will be used for aeration, and a portion of lagoon 2 will be used for sludge storage.

Implementation of the upgrades for TMDL compliance will include significant capacity to meet growth beyond the five-year planning period of this Comprehensive Plan update. Significant public involvement and study were involved in the selection of spray irrigation. The treatment/disposal alternatives that were studied under the Wastewater Facilities Plan are discussed below.

Murderkill River Watershed Pollution Mitigation

In 1972, the National Clean Water Act was established to provide a process for restoring the chemical, physical and biological integrity of surface water bodies. To comply with the Act, the State of Delaware has worked toward establishing surface water standards, a monitoring program and, for surface waters not meeting the standards, a mitigation strategy through Total Maximum Daily Loads (TMDLs).

In 1998, the Murderkill River Watershed, which includes the permitted discharge point for the Harrington Treatment Plant, was added to the State's list of waters requiring TMDLs. The 1998 Watershed Assessment (305b) Report listed Browns Branch with the highest

average Total Nitrate concentration of the various streams of the Murderkill watershed. Although non-point sources are shown as the probable sources of nutrients for the watershed, waste load allocations (WLAs) for NPDES-permitted discharges have been developed. Preliminary TMDL recommendations were released in April 2001, public comments were received in the fall of 2001. A court approved Consent Decree (C.A. No. 96-591, D. Del. 1996) required that the Murderkill River TMDL be established by December 31, 2001.

The Harrington WWTP discharges to Browns Branch, tributary to the Murderkill River and thus will be required to modify the concentrations of nutrients in its discharge or identify other solutions to achieve the same goal.

In July 2001, the Delaware Department of Natural Resources and Environmental Control (DNREC) published the Total Maximum Daily Load (TMDL) regulation for the Murderkill River Watershed. The State's purpose in establishing the TMDL regulation was to set allowable pollutant loads from all sources to meet water quality targets for five-day Biochemical Oxygen Demand (CBOD₅), Nitrogen (N), Phosphorus (P), and Dissolved Oxygen (DO). The TMDL regulations will require an upgrade to the City of Harrington's Wastewater Treatment Facility to reduce the nutrient concentrations within its treated water. The amount of reduction is related to the volume of treated water to be discharged.

The TMDL regulations, enacted in December 2001, established a maximum daily load in pounds per day (lbs./d) is shown in Table 18.

Table 18 Waste Load Allocations for Harrington Wastewater Treatment Plant

Parameter	Load (lbs/d)
C Biological Oxygen Demand ₅	33
Total Nitrogen	25
Total Phosphorous	2

Source: Secretary's Order No. 2001-A-004

The health of the receiving watershed is also improved by maintaining a suitable level of dissolved oxygen (DO) within the discharge. The Wastewater Treatment Plant is designed to provide 7.0 mg/l DO.

The City has recently completed an upgrade at their treatment plant which upon submission and approval of operating data will allow the plant to increase its NPDES permitted discharge from 492,000 gpd to 570,000 gpd. Based on the population projection and anticipated expansion of service within the service territory and finally, potential demand within the annexation area, the Wastewater Facilities Management Plan engineering study (on file with the Wastewater Facilities Advisory Committee and DNREC) projected a discharge capacity of 750,000 gpd will be required by 2018. This increase in capacity affects the allowable concentration of nutrients and other water quality parameters as tabulated in Table 19.

Table 19 Permissible Nutrient Concentrations

Water Quality Parameter	Load (lbs/d)	Concentration (mg/l) at 0.492 mgd	Concentration (mg/l) at 0.570 mgd	Concentration (mg/l) at 0.75 mgd
CBOD₅	33	8.0	7.0	5.3
Total N	25	6.0	5.3	4.0
Total P	2	0.5	0.4	0.3
DO		7.0	7.0	7.0

Source: City of Harrington Wastewater Facilities Plan, adopted May 2003

mgd – Million gallons per day

Operating with its current technologies, the Harrington Treatment Plant would not be able to meet the expected WLAs. However, the City has received State funding to meet the WLA limits at 750,000 gpd based on the alternatives analysis presented in its Wastewater Facilities Management Plan.

The City of Harrington is fully supportive of the proposed WLA, if it can meet these limits without requiring significant rate increases for its customers served by the wastewater treatment plant. Through a cooperative effort to work with Kent County and DNREC, Harrington has received a funding package of loans and grants that will enable it to meet the current regulations and further the goals for water quality improvements in the Murderkill River Watershed.

Alternatives Analysis

The Wastewater Facilities Management Plan evaluated six alternatives to achieve the water quality discharge goals contained in the new Murderkill watershed regulations. This subchapter is a summary of the alternatives analysis and evaluation presented in the Wastewater Facilities Management Plan on file with DNREC. The six alternatives were:

- (1) An upgrade of the existing lagoons to an enhanced-aeration Biolac⁷ system with stream discharge, at a capacity of 750,000 gpd;
- (2) An upgrade of the existing lagoons to a Biolac⁷ system with stream discharge, at a capacity of 570,000 gpd;
- (3) Abandonment of the existing lagoons and construction of a tank-style Sequencing Batch Reactor (SBR) treatment system with stream discharge;
- (4) Abandonment of the stream discharge with addition of spray irrigation for disposal;
- (5) Expand treatment capacity, abandon stream discharge and provide combined Milford-Harrington spray irrigation facility; and,
- (6) Abandon treatment facility and extend force main to connect to Kent County's Wastewater Treatment Facility.

The six alternatives can be grouped into two categories. Category 1 alternatives maintain the stream discharge and differ the treatment alternatives to meet the WLA limits. Category 2 alternatives provide the capability to eliminate the stream discharge, or perhaps maintain it only as a backup means of wastewater disposal. The second category of options requires

additional cooperation and coordination with either Kent County or the City of Milford. To implement an alternative with stream discharge elimination, the City of Harrington will need to negotiate an equitable and mutually beneficial interagency agreement.

A seventh option, “no action”, was not considered. The City recognizes the value of the goals of the Clean Water Act and the State’s desire to reduce the impacts of development and agriculture on the water quality of the waters feeding the Murderkill River watershed. The City of Harrington’s only concern with compliance is that it be implemented with the lowest additional fee to its citizens.

Evaluation of Alternatives

Category 1 -- Alternatives Maintaining Stream Discharge

A number of existing technologies could be used to achieve WLAs at the treatment plant. However, any alternative that would maintain the current stream discharge will also need to include the following plant modifications:

- (1) Chlorination Outfall Reconstruction - In order to achieve the Dissolved Oxygen requirement, the outfall will require reconstruction to provide additional aeration of the effluent prior to discharge.
- (2) Aeration Building to house blowers - All alternatives in this category require the use of either positive displacement or centrifugal air blowers to provide the lagoon aeration required for the treatment process. In order to limit noise impacts and to protect equipment from the environment, a building would be required to house the blowers.
- (3) Recycle Activated Sludge (RAS) Pumping - A pumping system would need to be installed to recycle activated sludge to the head of the plant.
- (4) Fine Screening Equipment - The City experiences problems with the lagoons during spring and fall, when temperature fluctuations cause water to overturn. Plastics and other items that have settled into the sludge are lifted to the water surface and create suspended-solids problems. These problems will continue

to occur with other types of treatment processes. It would be more beneficial to the City's treatment process to install fine screening and remove these materials from the process train. An alternative to fine screening would be a shredder to reduce the size of these items.

- (5) Sludge removal – Sludge is regularly removed from the existing lagoons maintain the functionality and capacity for which they are designed. All treatment alternatives will continue to require regular sludge removal and off-site disposal.
- (6) Yard piping and electrical - Additional yard piping, electric power and controls would be required for all alternatives considered.

In addition to these common treatment improvements, any Category 1 alternative will need work within the City's existing treatment facility property.

Alternative 1 - Upgrade Existing Lagoons with Biolac⁷ System for 750,000 gpd

Utilization of the Biolac system would allow maximum usage of existing facilities, and provide a cost-effective opportunity to expand capacity. A portion of the second lagoon would be utilized for construction of the Biolac process, with two process trains of 375,000 gpd, or a total treatment capacity of 750,000 gpd.

The existing first lagoon would remain and serve as a volume-equalization basin. The second lagoon would be partitioned, with an area to be utilized for the Biolac system. This area would need lining with a Hypalon or similar liner and an integral, concrete clarifier would be constructed as part of the treatment system. The remaining area of the second lagoon would be utilized for sludge storage.

Alternative 2 -Biolac⁷ Upgrade, no Capacity Increase at this time

The items listed for Alternative 1 would be required with a slight reduction in size. A portion of the second lagoon would be utilized for construction of the Biolac process, with two process trains each with a capacity of 285,000 gpd for a total treatment capacity of 570,000

gpd. The lagoon area to be utilized for the Biolac system would be lined and an integral concrete clarifier would be constructed as part of the treatment system. The remaining area of the second lagoon would be utilized for sludge storage. As with Alternative 1, the first lagoon would still be utilized and serve as an equalization basin.

The decreased size of the lagoon does not result in considerable cost savings, and puts the City in the position of expecting another expansion project within the next 5 to 10 years, depending on the actual growth in demand within the planning area and Farmington. All items presented in Alternative No 1 would still be required. The only change would be a slight decrease in the quantity of the liner and a possible downsizing of the air blowers from 20 Hp to 15 Hp.

Other than deferring expenditures, this alternative offers no other advantages over Alternative 1.

Alternative 3 -Sequencing Batch Reactor

This alternative would eliminate the use of the existing lagoons and utilize new, steel (or concrete) tanks to house a compact aeration and clarification system. The system would function as a sequencing batch reactor (SBR), designed for nitrification and denitrification and biological phosphorus removal. Aeration requirements, and therefore power and maintenance costs, would be similar to those required for the Biolac system.

The cost for this option is considerably higher than the above alternatives due to the tank construction cost. If the treatment plant site had an extremely limited area, an SBR system may be considered as an attractive alternative, however, the lagoons already exist and are large enough to support other treatment systems.

Category 2 -- Alternatives with Possible Elimination of Stream Discharge

Alternative 4 - Spray Irrigation of Effluent at Kent County Sludge Farm Lands

Rather than discharging the treated effluent into Browns Branch, the effluent would be piped from the Harrington WWTP to a farm currently in the County's Sludge Farm Program. The water would then be applied to crops or managed plantings through spray irrigation. The existing stream discharge point would need to be maintained as a backup, during wet weather flows, or periods when spray irrigation could not be performed.

A pump station and force main would be required to move the effluent to the farm. Depending on the capability of the farm site to accept the proposed irrigation, some amount of storage will be required for equalization, wet season storage and same periods of time when spraying was not feasible at the farm. A portion of Lagoon 2 would likely to be converted to storage, and a new storage lagoon might be required at the sludge farm.

Alternative 5 - Milford-Harrington Spray Irrigation Project

This project was investigated in the mid-90's and was found technically feasible. It would require an additional treatment plant site for wastewater generated by the City of Milford. Today, with new residential development filling the lands between Harrington and Milford, acquisition of a suitable site for a new wastewater treatment facility may be difficult. The site would be located within the County and require approval by Kent County. An intermunicipal agreement between Harrington and Milford would be required.

Alternative 6 - Abandon Treatment Facility and Extend Force Main Discharge to Kent County

The alternative would eliminate the discharge and abandon the Harrington WWTP, however the nutrient load would be transferred to the Murderkill River at Frederica, rather than reduced. The existing pump station at the WWTP would require significant upgrade to handle the transmission of all wastewater to Frederica.

On initial consideration, this alternative appeared to be fairly low-cost. However, in addition to the site shutdown, pump station upgrade and force main costs, the transfer of responsibility would also require payment of impact fees to Kent County that would then be used to the

Kent County WWTP to comply with the TMDL mandates. The current impact fee is \$1,115.00 per EDU. The proposed capacity of the Harrington treatment facility is 750,000 gpd or 2,500 EDU. Therefore, the impact fee to the County would be \$2,787,5000. In addition to the impact fee, approximately 16 miles of force main and a pump station would be required. Because of the combined costs, this alternative was eliminated from further consideration.

Environmental Comparison

The Category 1 alternatives (1, 2 and 3) would not result in a detrimental impact on either the receiving stream or groundwater quality. As required by the TMDL regulations, all three alternatives reduce nitrogen and phosphorus loads entering the Murderkill watershed. Alternatives 1 and 2 would produce somewhat less sludge than Alternative 3 at equivalent capacities. Long-term storage and treatment in the holding lagoon would further reduce sludge handling quantities in Alternatives 1 and 2.

Alternatives 4 and 5 would potentially eliminate the discharge entirely by spray irrigation. A new Land Treatment System Permit would be required. The permitting process includes a significant environmental investigation and a long-term, groundwater monitoring program while the permit is active. The Murderkill Tributary Action Team, a coalition of government agencies and interested citizens, currently includes spray irrigation is an environmentally preferred disposal option to point-source discharge or on-site (septic system) disposal in the draft Pollution Control Strategy document.

Alternative 6 relocates the discharge to the Kent County treatment facility. This alternative has significant benefit through elimination of the point source discharge to the Browns Branch drainage, but relocates the nutrient load further downstream to the tidal portion of the Murderkill River. Further evaluation of the environmental impact cannot be completed without a review of the TMDL compliance plan for the Kent County WWTP.

Alternatives 4 and 5, which utilize spray irrigation for the effluent disposal appear to hold the most environmental benefit. Land treatment facilitates additional reduction of nutrient loads to the watershed by replacing applied fertilizers in part with nutrients in the wastewater. The effluent is returned to the ground surface, where plants use some and some evaporates. The remaining water percolates through the soil, where naturally occurring bacteria continue to utilize nutrients. Finally, the water recharges the groundwater table. Under the conditions of a LTS permit, the further impacts to the groundwater quality are not allowed. In many cases, the effluent is lower in nitrates than the shallow groundwater and some improvement is effected.

Economic Comparisons

Alternative 4 offered the best scenario for maximum environmental benefit at the least cost. A table comparing the costs of Alternative 1 and Alternative 4, is presented below as Table 20.

Table 20 Estimated Costs of Alternative 1 and Alternative 4

	<u>Alternate No. 1</u> Biolac Upgrade to 0.75 mgd	<u>Alternate No. 4</u> Spray Irrigation for 0.75 mgd
Total Project Cost	\$2,484,000	\$2,145,000
Preliminary Grant Funding	<u>\$867,000</u>	<u>\$867,000</u>
Amount of Loan Required	\$1,617,000	\$1,278,000
Assume Loan Term = 20 yrs @ 3.25%		
Additional Annual Debt Service	\$119,800	\$94,700
Additional Annual O & M	<u>\$35,000</u>	<u>\$35,000</u>
Est. Total Additional Annual Cost	\$154,800	\$129,700

9 PLANNING COORDINATION

State's goals, and Policies

The State of Delaware outlined its goals in the December 1999 Strategies for State Policies, and March 2001 Livable Delaware initiatives, to ..."help manage new growth . . . while revitalizing town and cities and protecting the state's environment and unique quality of life." In March 2001, Governor Minner proposed and passed legislative initiatives which were directed at implementing the Strategies' goals.

The Livable Delaware policies are compatible with Harrington's goals for steady, sustainable growth. Harrington is a community which plans to support annexations and internal growth with adequate sewer, water, police and other key services.

The City of Harrington Comprehensive Plan, when adopted, will be used to evaluate requested annexations, and to track the City's progress as it implements projects and ordinances that will support the goals of the community.

Other Planning Entities and Coordination

Appendix 6 lists other agencies and entities that have planning mandates that include the Harrington area. Some of these agencies were presented with the general Harrington plan on August 19, 2002. Further evaluation occurred through the LUPA review process. In general, it is Harrington's intention to work with these agencies to assure the maximum benefits of sustainable growth to Harrington's citizens.

The greater planning area was patterned from the Kent County growth areas outline and the State Strategies "Primary and Secondary Developing Areas" outlines. Although not intended as the final annexation plan, growth within this area will affect Harrington through demands on its transportation, education and environment over the next 5 years, and therefore is an area that demands coordination between the appropriate agencies with planning mandates and the City.

Under this plan, the City of Harrington will continue to participate in joint planning meetings sponsored by the Office of State Planning Coordination, where projects within the City and the greater planning area may be reviewed. In particular, the City hopes the OSPC will assist in chairing forums with DelDOT as the Harrington Truck route proceeds as well as to discuss the progress of the Corridor Capacity Preservation Program on US Route 13.

The City will also work with DNREC as new environmental regulations for wellhead protection and groundwater recharge preservation are implemented.

Kent County will continue to be an important partner with the City as the City and County work together to implement nutrient reductions to the Murderkill River watershed. The City will continue to monitor the progress of the Murderkill Tributary Action Team and participate in discussions that are related to the City's wastewater discharge activities. The expansion of the existing WWTP facility is compatible with a number of regional environmental and smart-growth planning goals. The reduction of nitrogen and phosphorus in the permitted discharge into Browns Branch will assist the stakeholders of the Murderkill Watershed to reduce pollution loading into the drainage system.

Using the Office of State Planning's website and GIS mapping technology the City will monitor development activities occurring beyond the City but in the greater planning area. The City will use the available LUPA process and the County's Regional Planning Commission public meetings, as necessary to participate in the discussion of continued development in southwestern Kent County.

Maintaining a thriving agricultural economy and healthy watershed environment has numerous benefits for the City of Harrington and Kent County at large. The City will support the Delaware Department of Agriculture's farmland preservation activities and encourage nutrient management practices within the Murderkill Watershed. The City would

encourage the Department of Agriculture to consider treated wastewater spray irrigation as a suitable activity for acreage under agricultural preservation.

LUPA Comments

The Office of State Planning Coordination (OSPC) reviewed the draft plan and collected comments from various State agencies. The reviewing staff provided the City with specific certification issues that required clarification prior to certification. This version of the Plan has been amended to include the additional information requested.

The City's ability to successfully serve its growing constituency depends largely on the capacity of its water and sewer systems. The wastewater portion of the plan was placed in a separate Chapter, and additional information was provided regarding expansion plans for both water and sewer systems. In particular, the Wastewater Chapter was re-organized to make clear the City's commitment to meeting the challenges of environmental compliance and capacity preservation, as well as prudent expansion.

The City responded in part to LUPA comments during a meeting on December 5, 2003, which included Mayor Price and David Edgell of the Office of State Planning Coordination. During this meeting, the City's future plans and wastewater infrastructure were discussed at length. As a result of this meeting the majority of OSPC's certification questions were resolved to their satisfaction. The following is a brief summary of the main points discussed:

1. The City is proceeding with "Alternative 4," which is a proposed spray irrigation facility east of the City utilizing a farm owned by Kent County.
2. The City is in the process of negotiating an agreement with Kent County to allow for the use of this property and address relevant permitting issues. While the agreement is not finalized at this time, the negotiations are in the late stages and it is likely that an acceptable agreement can be reached.
3. Once the agreement is finalized, the City will proceed with the permitting process through DNREC to allow for the spray irrigation facility and the increase in capacity to an eventual 750,000 gpd.
4. As soon as conditions permit, the City will proceed with appropriate studies and actions to address Infiltration & Inflow in the existing collection system.
5. The City is well aware that there is finite capacity in any wastewater system. Harrington will proceed cautiously with new development approvals and carefully evaluate annexation proposals to ensure that development proceeds at a pace that is sustainable for the City. Specific policies and intentions were discussed, including:

- a. EDUs will not be allocated in large blocks. Developers must apply for access to the wastewater system on a unit by unit basis.
- b. The City will make it clear that development approval or annexation does not obligate it to provide EDUs if there are capacity limitations in the system. The City reserves the right to monitor its infrastructure capacity and allocate EDUs as necessary given technical, environmental and fiscal constraints.
- c. The City may provide utilities to out of town customers who are adjacent to the City's boundaries, and evaluate these requests based on the same criteria.
- d. Even though the Farmington sewer connection has the potential to serve additional customers, the City will evaluate requests for additional service using the same criteria discussed above. There is no reservation of a certain number of EDUs for Farmington.
- e. The City is well aware that there is limited capacity in the wastewater system. In recognition of these limitations, Harrington will proceed cautiously with new development approvals and carefully evaluate annexation proposals to ensure that development proceeds at a pace that is sustainable for the City.

6. As growth in the system approaches the capacity of the proposed upgrade, the City will again reevaluate its options regarding wastewater treatment capacity and plan for the next phase of expansion that is needed.

7. There are similar limitations in the water system, and the City will follow the same general policies for evaluating capacity as development and annexation is proposed. The plan contains a recommendation for an additional elevated storage tank, which may become necessary during the plan period depending on the pace of development. The City is pursuing an agreement with the Delaware State Fair to allow the sharing of water through an interconnected water main, and this may be one option for improving capacity and fire flow in the future.

8. The City has a good working relationship with the Delaware State Fair, and already provides the Fair with many utilities and services including sewer and public safety / EMS.

9. The population estimates in the plan are based on current activity and proposed build out of one property currently under construction. The City realizes that these estimates may be conservative depending on annexations and other development pressures. The potential for changing conditions and an increased pace of development underscore the need for the City's policy of continual re-evaluation of utility capacities as development and annexation proposals are reviewed.

In addition to the items presented above, Table 21 is a directory of the certification issues, recommendations and other comments and where to find the pertinent amendments within this Plan.

Table 21 LUPA Comment Reference

Wastewater System Capacity and Growth Plan	Clarify growth policy	
Water System Capacity and Growth Plan	Clarify growth policy	
Commitment to Sustainable Growth	Include specific language	
Plan of Service Requirement	Acknowledge procedure	
Clarification of Annexation Area	Expand legend on Map 9D	
Annexation Plan	Describe annexation expectations	
	Describe specific annexation areas	
	Include acreages and residential densities	
	Identify specific issues surrounding annexation areas	
Economic Development Plan	Clarify text and include specifics	
Environmental Policies	Reduction of non-point source nutrient loads	
Housing Opportunities	Affordable housing policy	
	Higher density annexation areas	
School Facilities	Ordinance review for conditional use	
Agricultural Protection	Acknowledge districts	
	Justify size of annexation area	
Harrington Truck Route	Revise text to reflect DelDOT's role	
Historic Preservation	Designation of Historic Districts	
	Re-organization of History and Culture section	
	Clarification of district mapping	

10 THE 5-YEAR PLAN

Through the process of public participation and evaluation of the City's demographics, economics and land use, the City of Harrington identified four objectives reflecting the City's current outlook and the impacts that anticipated growth could have in the next five years and beyond. These are:

- to promote Harrington's ideal location in Kent County for a diversified economic expansion as a "bedroom community," tourist destination, as well as a manufacturing, agri-business and industrial center;
- to maintain Harrington's historic center and small-town look while encouraging sustainable growth;
- to achieve environmental compliance at the wastewater treatment facility without a rate increase for the citizens of Harrington, and
- to enhance Harrington's reputation as a great place to live.

The goals of this Plan are:

1. To promote the City's ideal location by optimizing the City's transportation assets;
2. To provide for sustainable growth while preserving neighborhood character;
3. To take the lead in achieving compliance with environmental regulations for the watershed; and
4. To support Harrington's youth through collaborations with other agencies to provide recreation, open space and excellent educational opportunities within the City.

Implementation

The City is mandated through various laws enacted by the State of Delaware to take action on the elements described within this plan. Implementation of the plan will reflect a budget of manpower and money, some of which is tied to the financial well-being of the State and

the federal government. Many of the projects envisioned in the plan require grant or loan funding that may or may not be available in the future. Chart 10-1, following page, is an anticipated implementation timeline, however the City will revise and refine the implementation of this Plan on an on-going basis.

The Ideal Location

Harrington's situation along one of Delaware's main North-South transportation arteries combined with its active rail facilities make the City an ideal location for consolidation of residential, commercial and industrial activities. However, growth of these activities will be most beneficial if accomplished while maintaining the transportation corridors.

The Delaware Department of Transportation's Corridor Capacity Preservation Program was established to ensure the crucial transportation functions of selected roadways in the state will be maintained through the year 2020 and beyond. There are two plans drafted for Harrington that include one for north Harrington and one for south Harrington.

The plan being finalized for Harrington north is currently under review. An early proposal included modifications to the intersection of US 13 with Delaware Avenue, Carpenter Road and Jackson Ditch Road. The north plan will affect areas that are not currently within Harrington. However, the improvements will affect those who work in and travel through Harrington. Harrington will take an active interest in the development of any intersection improvements proposed by the north plan.

The plan being finalized to the south is referred to as the Truck Study, and includes modifications to crossovers along US 13, modifying the access points to the Harrington Fairgrounds and implementing improvements based on the truck study completed in Harrington. The specific improvements are listed as follows:

- Close the crossover at Fairground Road;
- Close the crossover just south of Chick's store;

- Modify the main entrance to the Harrington Fairgrounds to consist of right turn in and left turn out access only;
- Create an entrance to the Harrington Fairgrounds just south of the main entrance to consist of right turn in, right turn out and left turn in access only;
- Improve the turning radius at the intersection of southbound US 13 with Route 14;
- Create an acceleration lane on northbound US 13 at the intersection with Tower Hill Road as part of the new truck bypass route; and,
- Implement truck restrictions on Clark and Commerce Streets.

The City of Harrington will work with DelDOT for implementation of the Truck Study plan. The truck bypass route is highly desirable for achieving the objectives of this plan and ties in directly with the City's Annexation plan (Goal 1).

Within the City, Harrington will continue to add and renovate sidewalks through Transportation Enhancement Grant funding. As in the past, a key element for prioritizing sidewalk projects will be to enhance the safety of school children and they travel to school and recreational facilities (Goals 1 and 4).

Finally the City will work with the Dover/Kent County Metropolitan Planning Organization to identify potential regional transportation opportunities, like commuter bus or train services, for Harrington residents and for the work force within the Harrington area (Goal 1).

A Plan for Sustainable Growth

A number of relatively cost-effective measures can be implemented by the City to assure the desired growth occurs in locations and with the facilities that most benefit the citizens of Harrington and the surrounding County.

To move toward the City's objectives and to achieve its goals, the City of Harrington plans to continue to use mapping as a planning tool. The City has adopted new Council Districts that

are up to date with the City boundary and new census data (Goals 1 and 2).

The Property Record Cards will continue to be brought up to date, and the data is being transcribed into an Access database. This information can be utilized as a GIS zoning data set in order to produce and maintain an up-to-date zoning map (Goal 2).

With the assistance of the Office of State Planning, the City's land use was surveyed in detail. The compatibility of current land use with the property zoning classifications will be evaluated. Funding for these efforts may be available through additional Livable Delaware grants (Goal 2).

As land use is mapped and the zoning database is brought up-to-date, the City will develop a system to assure architectural integrity of residential neighborhoods, through the development of a building frontage review. Kent County Planning Department has offered technical assistance to the City for developing such a process. Areas to be delineated for such a process will reflect potential historic districts that have been mapped through the State Office of Historic Preservation (Goal 2).

In addition to preserving neighborhood character through land use and zoning tools, the City will continue to provide the citizens with a well-staffed Police Department, assuring continued levels of public safety. With current staffing levels, the Harrington Police force includes one officer per 135 households. Population forecasts anticipate an additional 61 households joining the Harrington community over the next 5 years, which is not expected to undermine the effective operation of the Department. The City will also continue to support the Harrington Fire Company through infrastructure improvements in water, and support of EMT services (Goal 2).

The City will investigate options for maintaining or reducing the cost to its citizens of trash removal (Goal 2).

The City will initiate an engineering study of the water system's pressure distribution and develop alternatives for providing improved flows to the existing network and which would support expansion into new development within and beyond the City. The City's current water allocation is adequate to meet peak demands at the anticipated growth during the next five years (Goal 3).

The City's CPCN for water service will be brought up-to-date with the next round of annexations.

Environmental Leadership

The City of Harrington has water and sewer capacity to effectively serve its citizens and contract users. This plan includes the steps necessary to preserve and expand that capacity in order to grow at a rate that is sustainable and both fiscally and environmentally responsible.

Preliminary waste load allocation (WLA) limits were released for the Murderkill River Basin in July 2001 and adopted in December 2001. The City of Harrington is fully supportive of the goal to protect and improve the waters of the Murderkill Watershed, if the City can meet the new discharge limitations with limited rate increases for its customers. Upgrading the wastewater treatment system for compliance with new environmental regulations is the City's most immediate challenge.

Addition of an extended aeration/activated sludge process has been proposed to comply with the anticipated limits. Additional capacity (needed to meet the expansion of the area's population and the increasing number of visitors to the Fair) can be added extremely cost-effectively during the upgrade. It is estimated that a permitted discharge capacity of 750,000 gpd will be required in 15 years, based on a growth rate of approximately 6% per 5-year projection period. The proposed nutrient discharge limits for Harrington, based on 750,000 gpd, are tabulated below in Table 22.

Table 22 Effluent Concentrations to Meet TMDL Requirements

Parameter	Final TMDLs After upgrade to 0.75 MGD	
	WLA (lbs/day)	Conc. (mg/L)
BOD 5	33	5.33
Total N	25	4.0
Total P	2	0.33
Dissolved Oxygen	--	7.0

If State Revolving Fund loans and EPA grants are approved to meet the WLA limits at 750,000 gpd, the City proposes to upgrade the plant with the necessary equipment and process stream modifications for nitrification/denitrification, fine screening, and sludge removal from lagoons.

Implementation of the proposed upgrade will have positive environmental consequences, as intended by the Clean Water Act, DNREC's Antidegradation Policy and the final TMDL limits for the Murderkill River Basin.

Coordination and Planning

Newcomers to Kent County have many options when selecting a residence. Businesses will look for new locations that provide not only the infrastructures they need to operate, but for locations which will provide excellent communities for employees and as well as a future pool of potential talent to hire. To compete successfully for new residents and succeed in growing economically, Harrington will work with a variety of agencies and organizations to make its vision reality.

Harrington will seek to attract new households by offering not only convenient transportation, job opportunities and shopping, but by offering families recreational and educational options which other areas do not or cannot supply. The City will continue to work with local citizen's groups to capitalize on its success with various Parks and Recreation programs, and will continue to seek to new opportunities to serve Harrington's youth through partnership with private organizations and the Lake Forest School District. The City will look for ways to promote Lake Forest School District's efforts to maintain and improve the quality of education at South Elementary School and W.T. Chipman Middle School (Goal 4).

Currently, the Office of State Planning Coordination is providing training and guidance to the Planning Commission for review and revision of the subdivision and zoning codes. A GIS system of mapping will continue to be used to prepare and maintain the City's official Zoning Map.

11 ANNEXATION PLAN

Anticipated Growth

With the opportunities provided by the City's proposed infrastructure improvements, Harrington anticipates continued requests for annexation and service connections. In particular, the wastewater treatment plant expansion and the addition of spray irrigation to serve wastewater disposal will assist the County and the watershed in meeting the goals of the Murderkill Tributary Action team of improving the watershed's surface and groundwater quality.

Figure 9A shows the general annexation history of the City during the past forty years. In general, annexations have been in the north and east, while wastewater service extensions have occurred to the south without annexation.

Figure 9B illustrates the areas where the City anticipates receiving annexation requests or requests for additional wastewater service. No areas that are currently designated as Agricultural Preservation Districts or with Purchased Development Rights are included in the annexation plan.

Harrington continues to receive regular inquiries regarding the availability of water and sewer service, and annexations will be considered as the property owners make application to the City. The Annexation Plan anticipates annexations from within the area shown on Figure 9B, in roughly the time phasing indicated. It is unlikely that all the parcels included will request annexation within the planning time frame; however, it is very likely that from within the area indicated Harrington will annex new properties into the City within the next five years. Table 23 lists the time phasing and acreage.

Table 23 Possible Annexation Timing

Timing	Areas (acres)
Year 2003- 2004	383
Year 2005 – 2006	389

Year 2007 – 2008	275
Currently Developed/ Consider Annexation if requested	433
Total	1,480

Functional or actual enclaves of unincorporated properties within or at the margins of municipalities pose special problems for service providers. In particular, police and other emergency services generally do not limit their service to enclaves when public safety is at stake. Similarly, such enclaves may pose jurisdictional issues when roadway maintenance and snow removal are considered. For these reasons and others, the Office of State Planning has encouraged municipalities to include actual or potential enclaves within their annexation plans. The City of Harrington Annexation Plan includes developed parcels which may lie in enclaves, or which may request water or sewer service if on-site water or sewer facilities fail.

Finally the Annexation Plan includes most lands that are served by Harrington's wastewater system already, but are not in town. The obvious exception is the Town of Farmington, located approximately 3 miles south. The City extended sewer service to the Town of Farmington at the request of DNREC to assist in the elimination of a number of sub-standard on-site wastewater systems. Figure 4C and Table 24 provide information regarding the current land use within the Annexation Plan.

Table 24 Current Land Use within the Annexation Plan

Land Use	Area (acres)
Existing Residential Use	208
Crop Lands	800
Recreational/State Fairgrounds	205
Wooded	192
Vacant	55
Institutional (Hollywood Cemetery)	20
Total	1,480

Land Use Plan

In December, 2002 the City inventoried land use within the city limits. The resulting map is shown as Figure 4B. While the historic City center is built up, acreage within the city is vacant (generally mown or fallow, and under consideration for development), wooded and actively farmed, remains available for preservation or use. The City's desire to balance housing and employment opportunities with sound environmental and social practices is reflected in the Future Land Use map, included as Figure 9C.

Table 25 Desired Land Use in Harrington

Desired Land Use	Area (acres)
Low to Medium Density Residential	412
High Density Residential	46
Highway Commercial	222
Downtown Business/Mixed Use	100
Industrial/Manufacturing	78
Open Space and Preservation	122
Public Utility	40
Institutional/Government	95
Transportation	145
Total	1,260

Currently the City of Harrington Planning and Zoning Commission considers neighborhood consistency where hearing requests for re-zoning within neighborhoods with single family homing, in an effort to maintain a level of neighborhood consistency and land use. This Future Land Use Plan follows that desire to develop land use within the City that encourages a sense of character and continuity within neighborhoods.

The City will revise its procedure for Annexation processing by including a review of the proposed Annexation within the land use guidelines provided in the approved Comprehensive Plan.

The City will review its zoning categories and consider alternatives, such as overlay zones for

areas with specific needs (for example, historic or flood-prone), to develop additional tools for maintaining neighborhood character. The City will continue to update its zoning map to reflect the current status of properties.

The City of Harrington can support additional expansion under the plan of service based on the infrastructure maintenance and improvements outlined in the Section 10 “5-Year Plan.”

The City anticipates growth to continue to the north, along Pea Hill Road, as residential development; with limited areas of neighborhood commercial use (such as day care, convenience stores or other personal service providers) to the northeast, between US route 13 and DE Route 14, as Residential and Mixed Use (Residential/Commercial), and to the southeast along Corn Crib Road as Residential.

The City has long served as a focal point for farm service and equipment providers as well as a transportation hub for the distribution of agricultural products. The location of the State Fair grounds contributed to Harrington’s association with Delaware’s most important industry. The City would like to encourage additional agri-businesses along the railroad to the east of the City, and to the south (west of the highway). These areas include the State Fair Grounds, which the City already serves for sewer and water. These areas also include potential “brownfields” sites that could be renovated for higher land use.

The expansion of commercial, entertainment and agri-business to the south of Harrington would be enhanced by the proposed truck route by-pass along the Farmington Road, as envisioned by DelDOT. Harrington will work with the Delaware Economic Development Office to identify potential enterprises, such as vegetable washing and /or packing plants, which would not only provide new job opportunities, but may also encourage additional agricultural preservation to the west of the City.

Table 26 indicates the desired land use within the annexation area and provides the approximate acreage. Land use within the annexation plan is also shown on Figure 9D.

Table 26 Desired Land Use for Annexation Area

Desired Land Use	Area (acres)
Existing Residential on Individual Well/Septic	89
Low to Medium Density Residential with Related Institutional and/or Public Utilities	710
Residential/Commercial	39
Institutional (Hollywood Cemetery)	17
Preservation/Open Space/Wooded	120
Agriculture/Related Businesses	178
Commercial	57
Industrial	65
Recreational/State Fairgrounds	205
Total	1,480

Consequences and Conclusions

Development of the potential annexation will require expansion of the City's wastewater system to serve new residents and businesses. Figure 10 divides the potential annexation area into sewer catchment areas that will grow over the next 10 to 15 years into logical sections of the sewer system. In general these areas will develop with a gravity collection system that will lead to a pump station, and then move wastewater into the existing system via a force main.

North 1

Parcels in the North 1 catchment are expected to be annexed within the next few years. Land use is preferred to be residential with a medium density. The sewer expansion will be gravity leading to a pump station currently under design for the Friendship Village area. Based on the medium density residential land use, and a minor drainage area, this catchment may, at build out, support an estimated maximum 390 EDUs.

North 2

While residential in nature, North 2 catchment is expected to develop at a low to medium density. A number of existing lots currently on individual well and septic systems are included in the area. The sewer expansion will be via gravity mains leading to the existing pump station on Calvin Street. The estimated maximum for this catchment is 525 EDUs.

East 1

This small area is an enclave of existing developed parcels along US Route 13. If service is requested, they could be added into the existing gravity collection system. The estimated EDUs for this area is 30.

East 2

East 2 is a large catchment that includes some strip lots along the main roadways and the Hollywood cemetery, as well as a number of large farmed parcels. A tributary to Browns Branch flows through the middle, with associated wetlands and floodplain. Gravity mains can be used to collect wastewater and deliver it to existing portions of the City's system on the east side of US route 13 or directly to the treatment plant. Land use is shown as residential on the Land Use Plan, with low to medium densities. The cemetery will remain institutional and landscaped open space. The estimated maximum at build out is 480 EDUs.

East 3

The catchment defined as East 3 lies north and south of the railroad. Gravity lines could collect wastewater to a pump station the hence via force main to the City treatment plant. Future land use for portions area was designated to make use of the potential industrial park, the proximity to the railroad. The City would encourage agri-business such as vegetable washing and shipping as well as industrial use. Some of the area could be used for spray irrigation of process water. Properties to the north east of the catchment are adjacent to existing residential and have been shown as low density residential in the Land Use Plan. EDUs for this area might be a maximum of 300, under this scenario.

East 4

East 4 is a catchment suitable for gravity collection and tie-in to existing wastewater systems. The land use is envisioned as mixed from low to high density, with a maximum EDU count of 200. A portion been mapped as Excellent Recharge, which would further limit the development in the area, in 2007 after new regulation go into effect.

East 5

The Annexation and Land Use Plans for these parcels provided for a mixed use of commercial and residential development on the east side of the highway. Potential wetlands and excellent recharge areas limit the possible densities for residential subdivision. Wastewater would be collected with gravity mains to a pump station and moved onto the existing Harrington system via force main. EDUs at build out are estimated to be 325.

South 1

South 1 is a small, partially developed area along the railroad. Land use is anticipated to be commercial/industrial with limited additional EDUs of 20.

South 2

The State Fair Grounds and Midway Slots are located on the South 2 catchment, which is already developed with gravity collection system and pump station. The Fair has an agreement with the City for future growth that is included in the tally of existing wastewater flows. The properties south of the Fair have potential for agri-business development, utilizing both the planned truck route along Farmington Road and Tower Hill Road and the railroad. In addition, the City could in the future work with the Fair to investigate expansion of spray irrigation within this area. Based on this scenario, an additional 20 EDUs may be generated by this area.

West 1

West 1 is located between the planned truck route along Farmington Road and the railroad. The City is desirous to encourage vegetable or grain washing and shipping in this area, with suitable portions used for spray irrigation of process water, when feasible. Other wastewater would be collected by gravity to a pump station in the north of the catchment, to be added to the existing system via force main. EDUs are estimated to be 35 under this land use scenario.

West 2

West 2 is a small area of two split parcels (within the City and the County). The land use is shown as residential on the Plan, with gravity collection tying in to the existing gravity system. The area is estimated to support a maximum 75 additional EDUs.

Conclusions

These goals and the items proposed to achieve them are consistent with the following published plans: DelDOT's Corridor Capacity Preservation Plan, the objectives outlined by the Livable Delaware Strategies, the Kent County Comprehensive Plan, and the Murderkill River watershed nutrient management plan. The plan is consistent with smart growth approaches that form the basis of the other planning mandates in the Harrington area.

Economic Development Plan

The fundamental principle to providing economic opportunity to the citizens of Harrington is to encourage employment opportunities within the City. The City is committed to continuing its policy of providing suitable zoning categories and land areas within the City to accommodate the variety of business sectors that promote a diversified and stable economy.

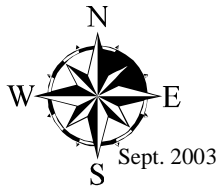
The Plan addresses types of industrial and commercial uses that are desired through the maintenance and implementation of the land use plan and zoning code. The City will assist and encourage property owners to redevelop existing, under utilized properties through the

Brownfields Program, Voluntary Clean Up Program, the State's Historic Preservation Tax Credit Program, and Community Block Grant programs. It is the City's intention to provide a varied and vital community to its citizens. Through the Comprehensive Plan, the City will promote enterprises that may offer higher-paying jobs, provide varied and affordable housing options to maintain the tax base, and support new commercial development to serve the community and provide additional employment.

The Harrington Industrial Park will be promoted through the City's own initiatives as well as in concert with the Greater Milford Area Chamber of Commerce and Delaware Economic Development Office.

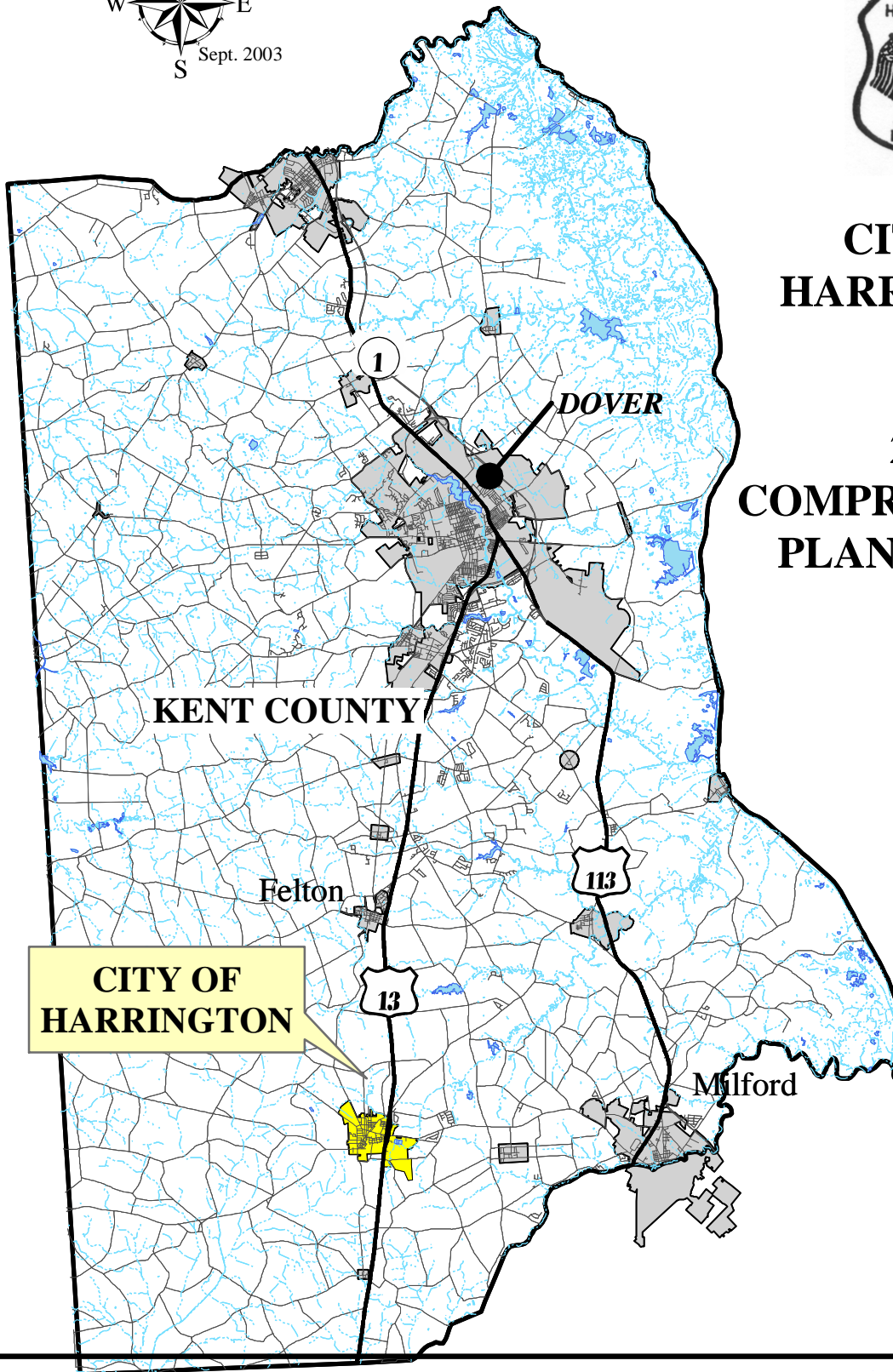
The City will continue to promote Harrington as an employment center through the use of adequate water and sewer, availability of natural gas, and state-of-the-art telecommunications. Harrington's fiber optic data lines currently extend along the railroad corridor and could be further expanded to be a significant part of attracting new enterprises, as well as assisting existing businesses to utilize the latest technologies.

Redevelopment of under-utilized properties will continue to be promoted through the City. The City will also coordinate with the Parks and Recreation Department, to integrate downtown redevelopment efforts with the Parks and Cultural Resources Plans included in this Update. The City will also coordinate with the Delaware Economic Development Office to widen its opportunities to keep constructed facilities fully utilized.

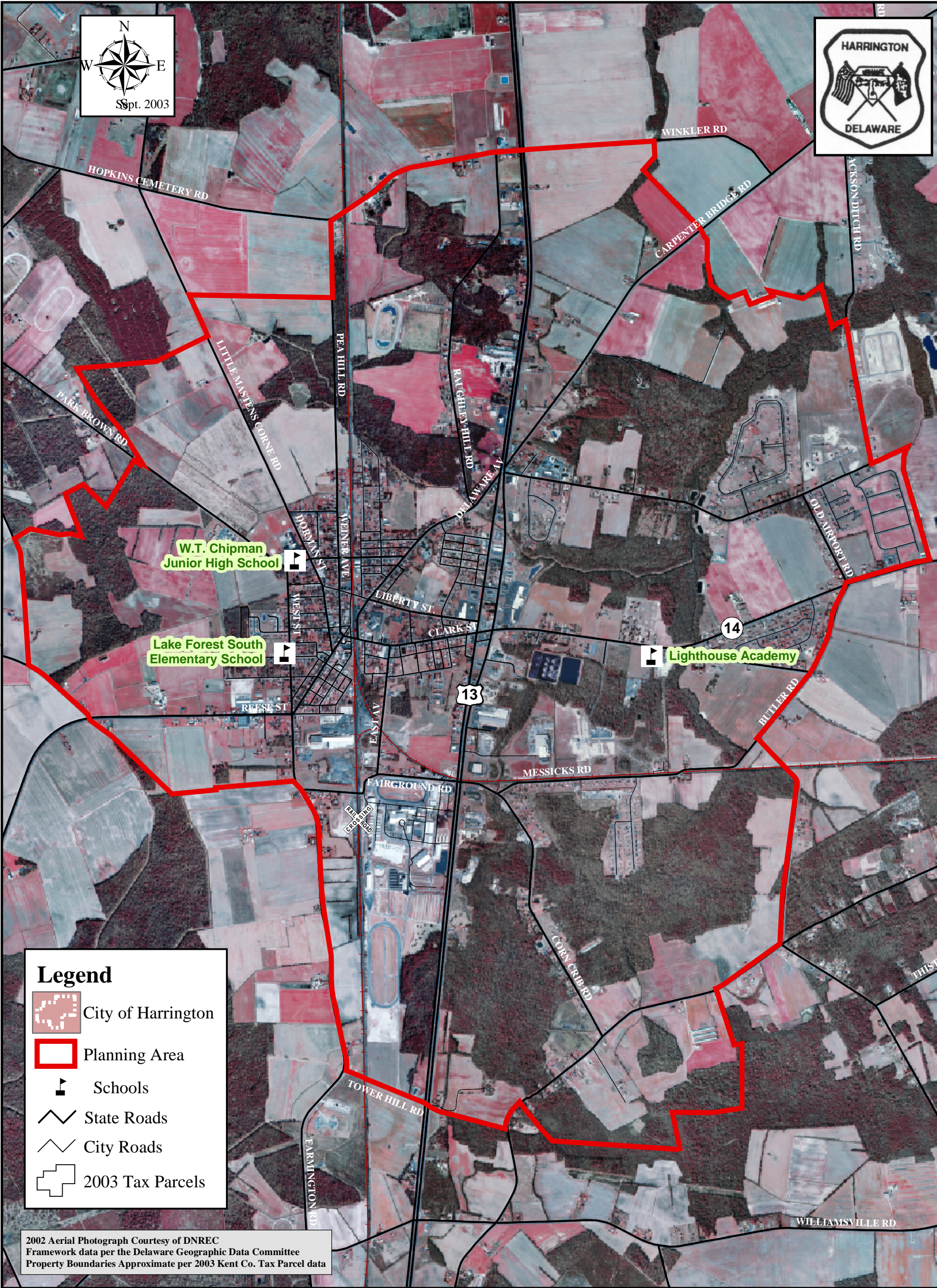


CITY OF HARRINGTON

2003 COMPREHENSIVE PLAN UPDATE



**Figure 1 -
Location Map**



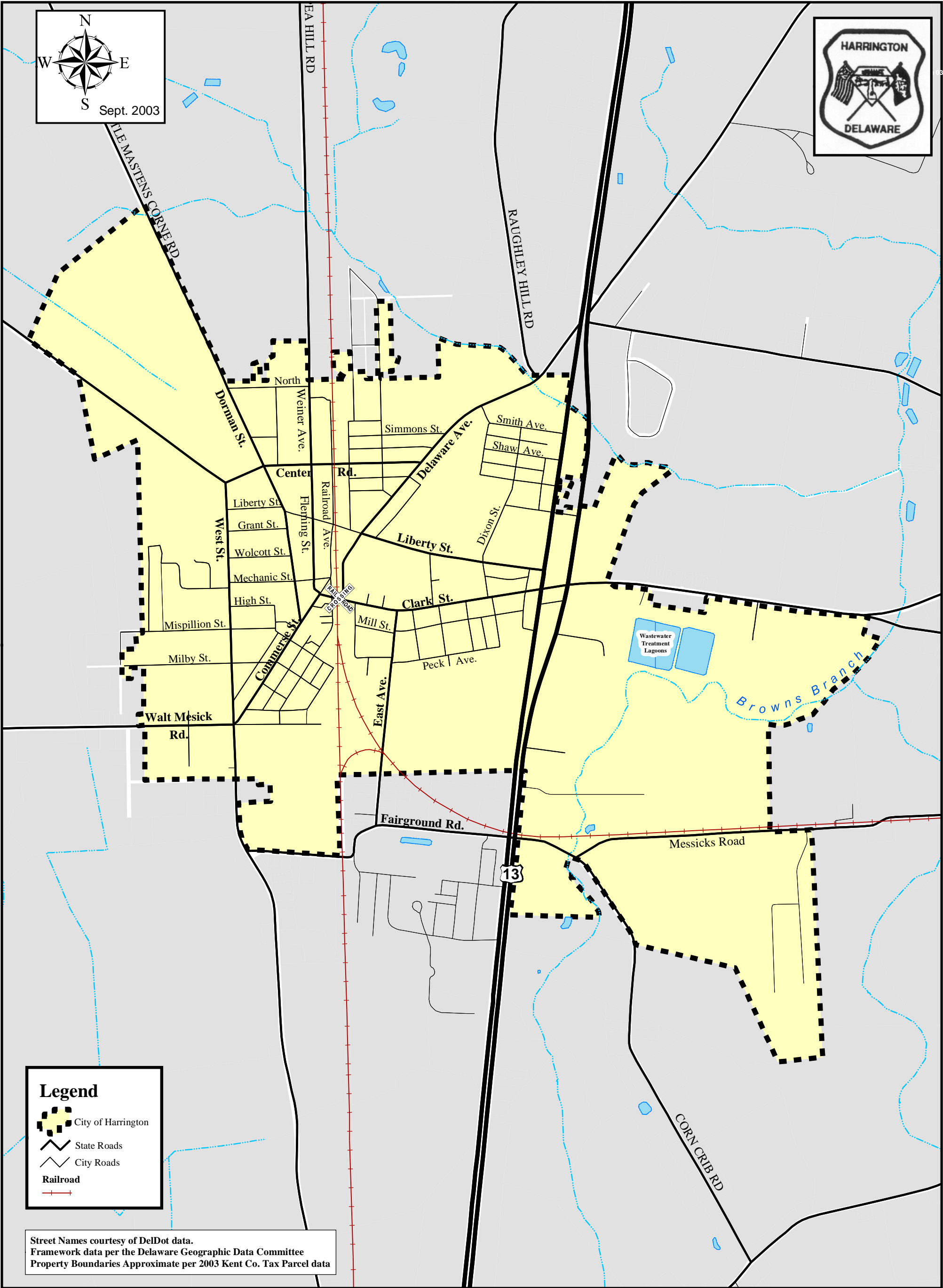
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City of Harrington COMPREHENSIVE PLAN

Figure 2A - Planning Area

0 1,000 2,000 4,000 Feet

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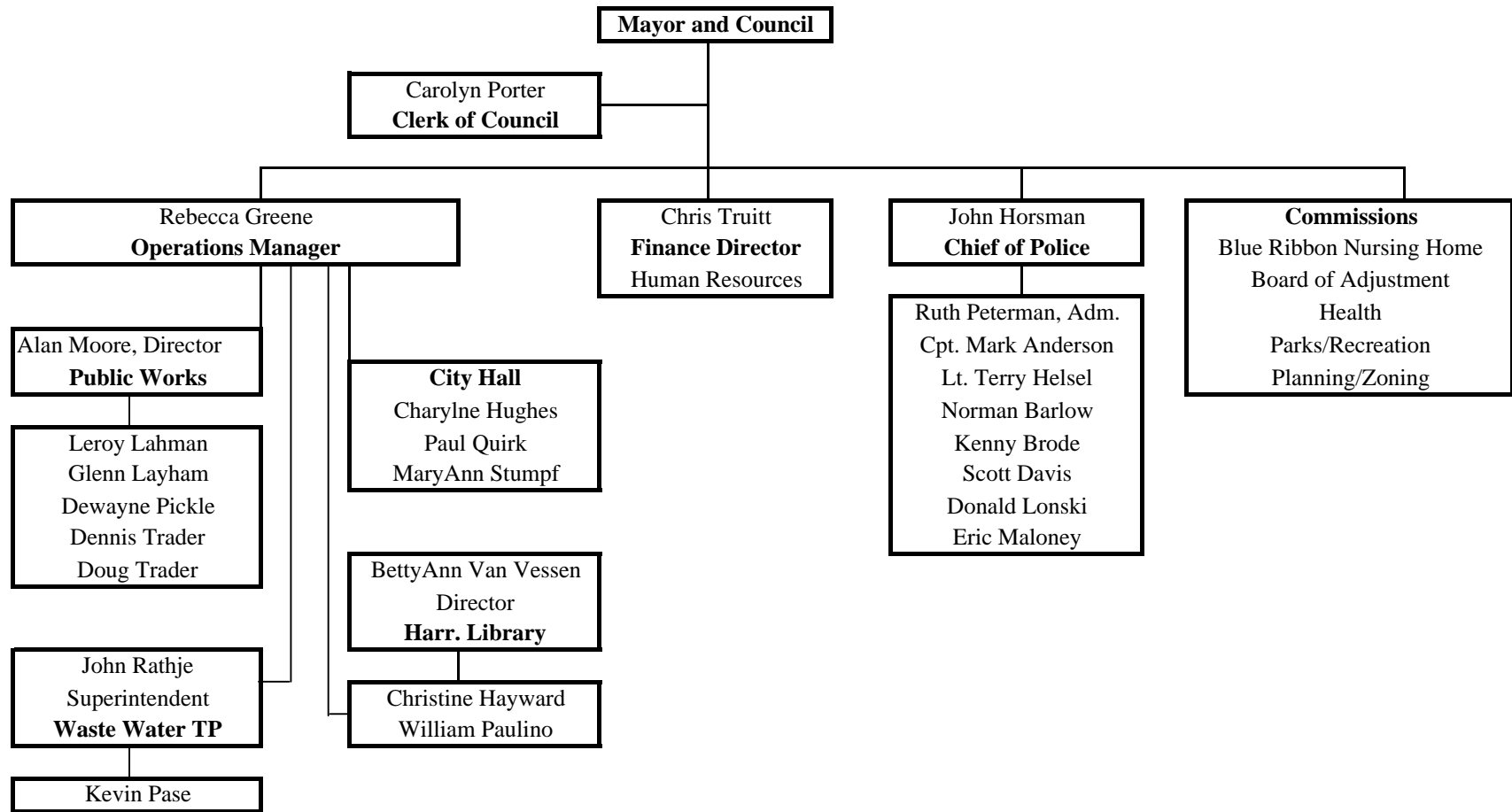
Figure 2B - Street Map

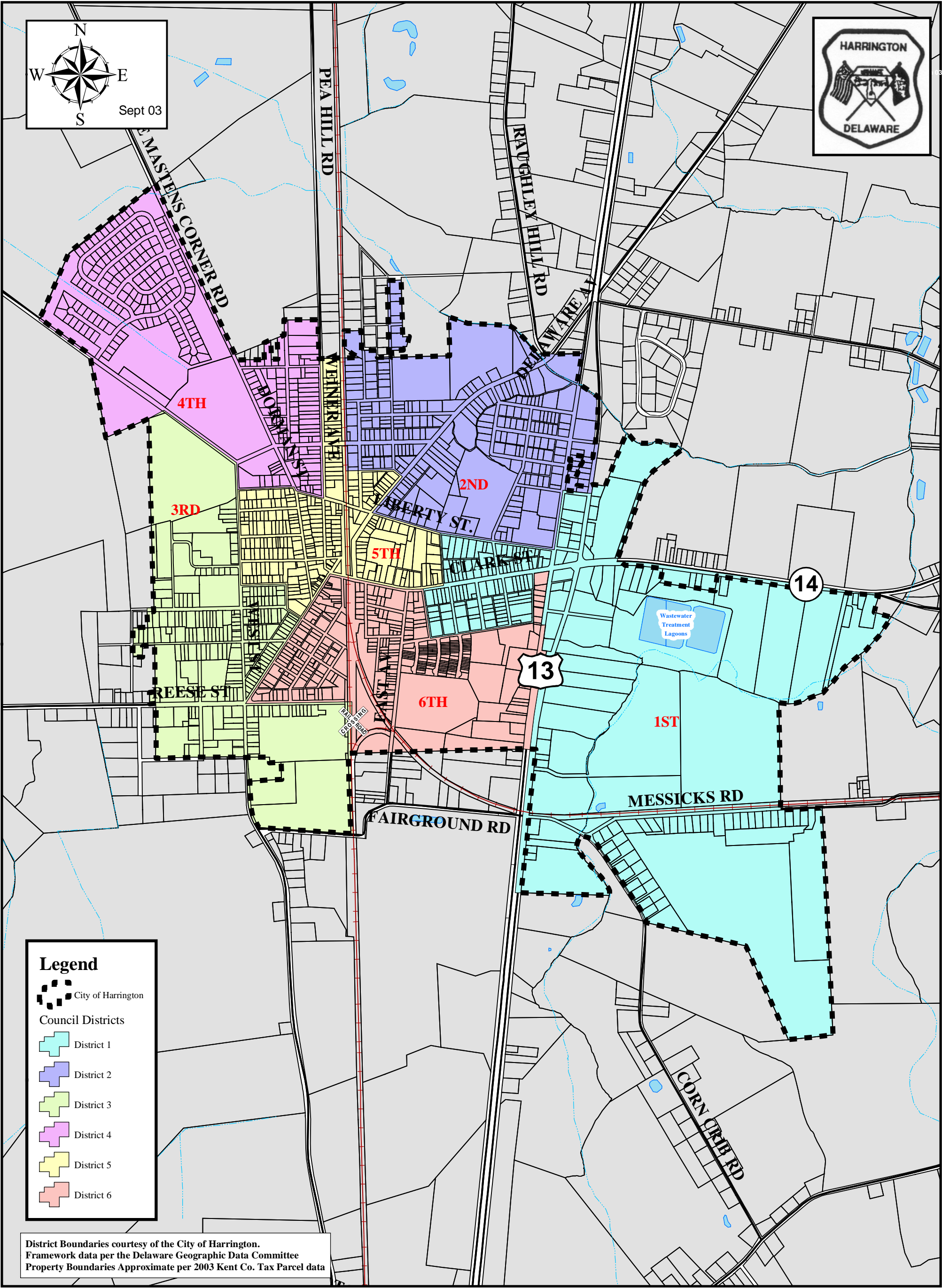
0 600 1,200 2,400 Feet

City of Harrington COMPREHENSIVE PLAN

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CITY OF HARRINGTON
Organization Chart

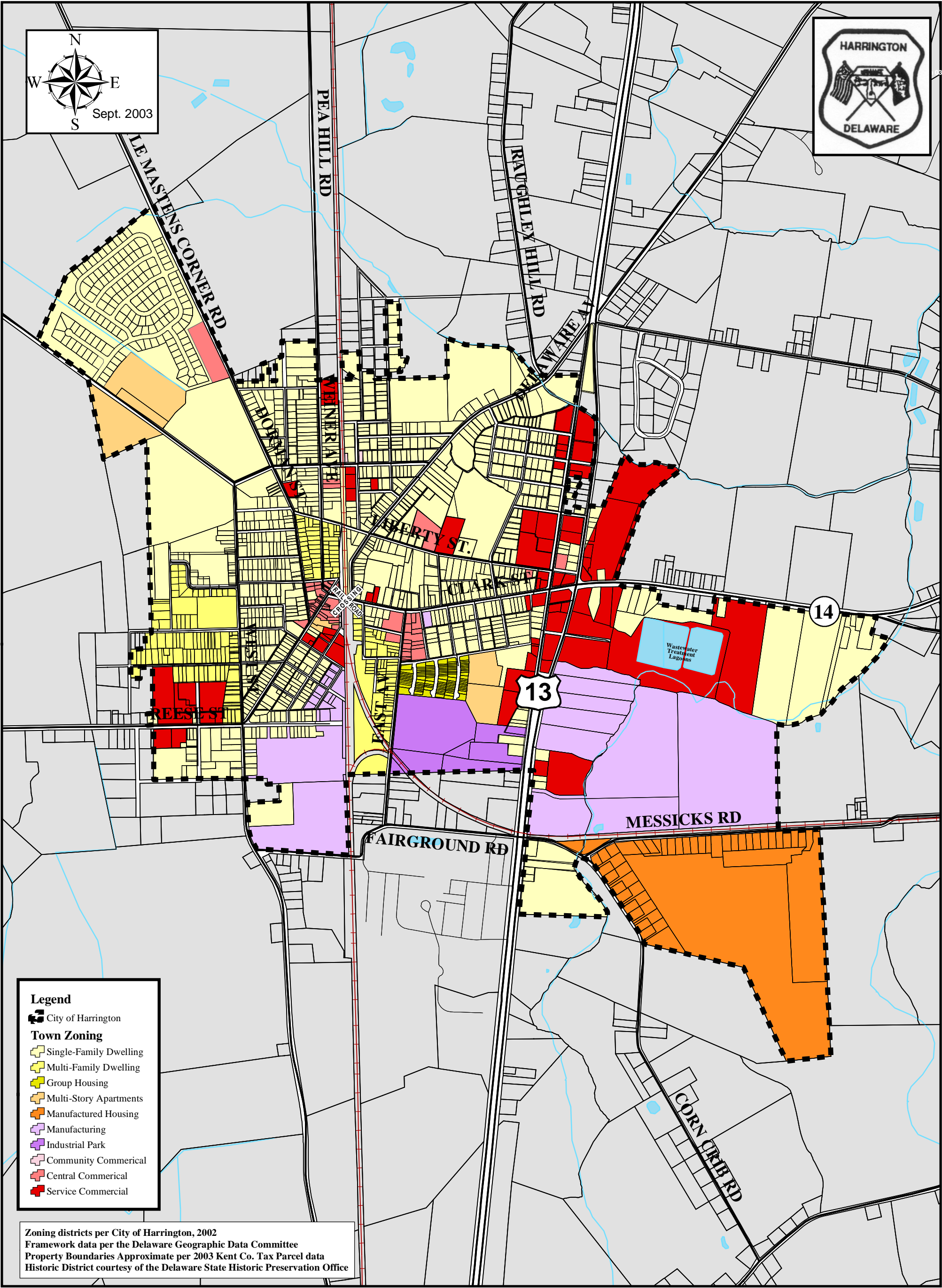




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City of Harrington COMPREHENSIVE PLAN

Figure 3B - Council District

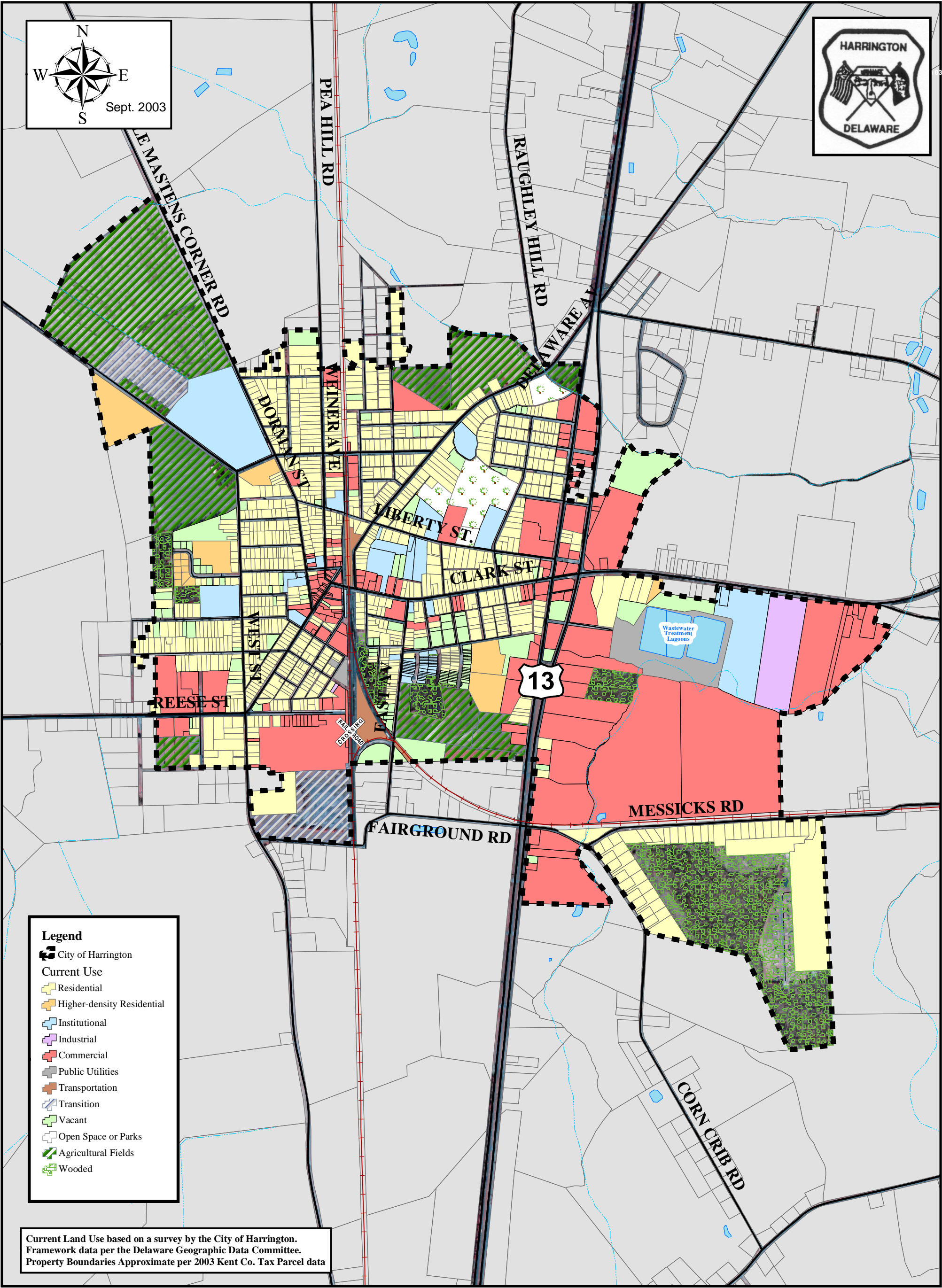


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0 600 1,200 2,400 Feet

City of Harrington COMPREHENSIVE PLAN

**Figure 4A - Unofficial
Zoning Map**



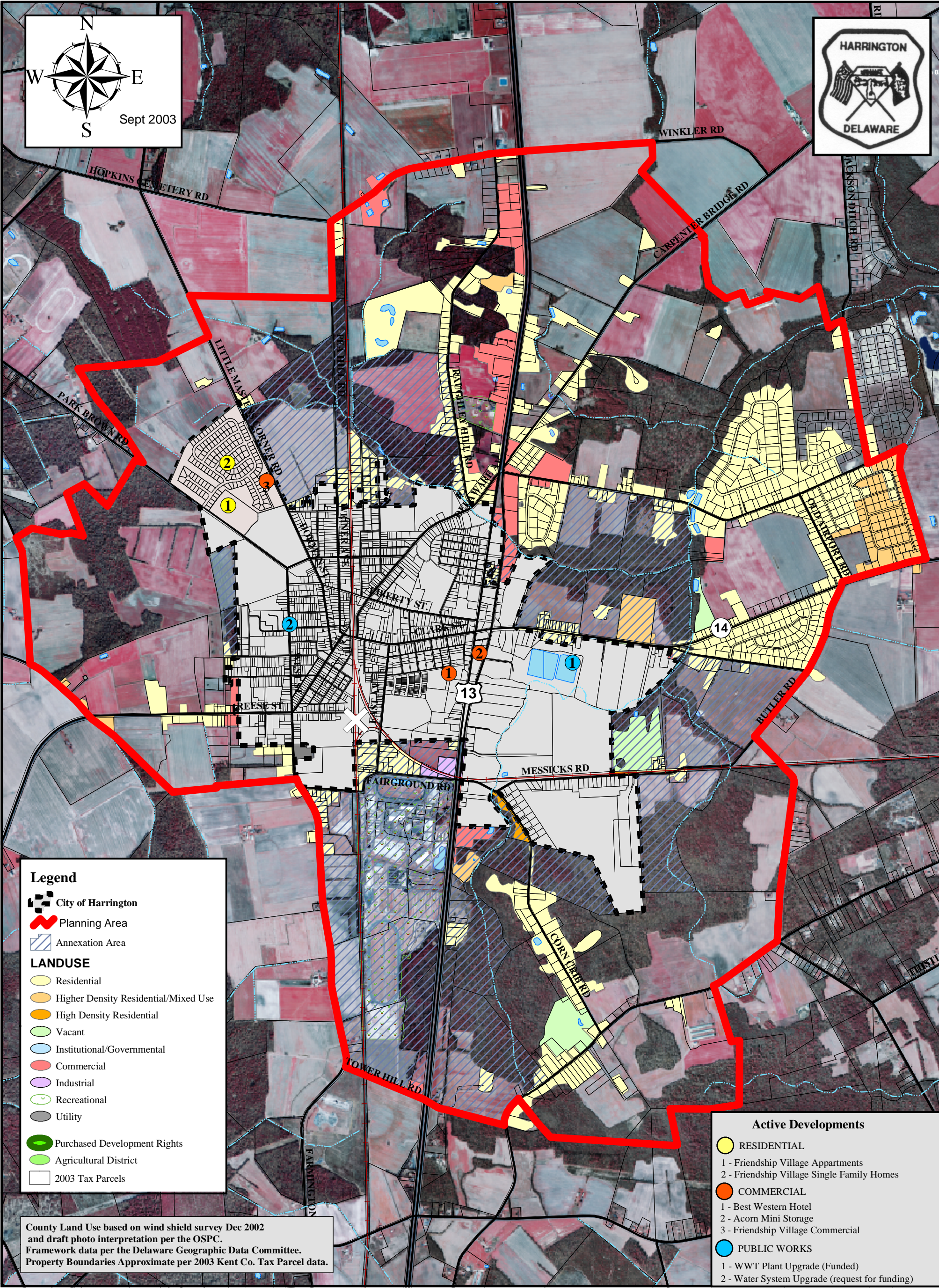
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0 600 1,200 2,400 Feet

City of Harrington COMPREHENSIVE PLAN

Figure 4B - CITY
Current Land Use

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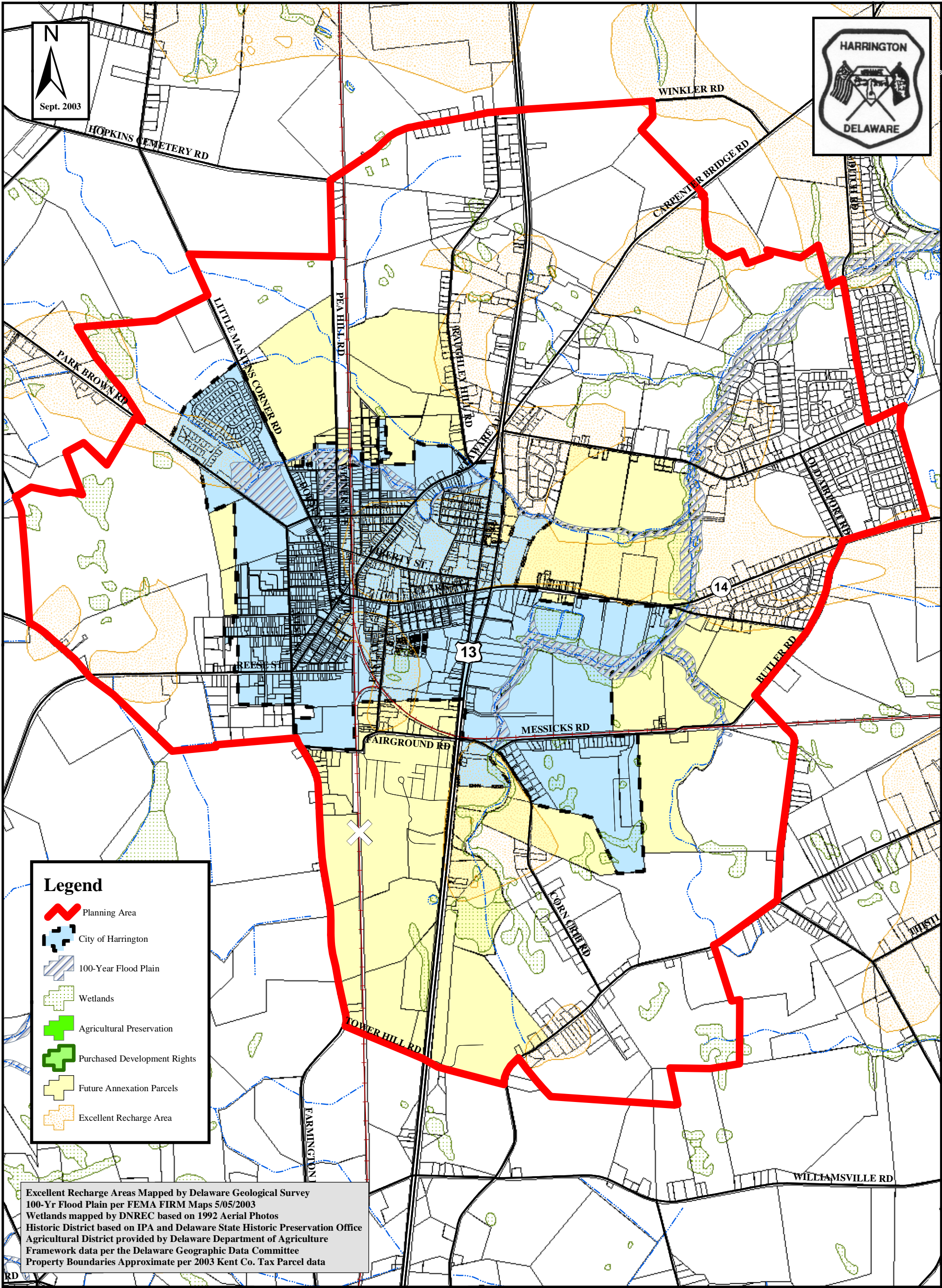
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0 1,000 2,000 4,000 Feet

City of Harrington COMPREHENSIVE PLAN

**Figure 4C - PLANNING AREA
Current Land Use**

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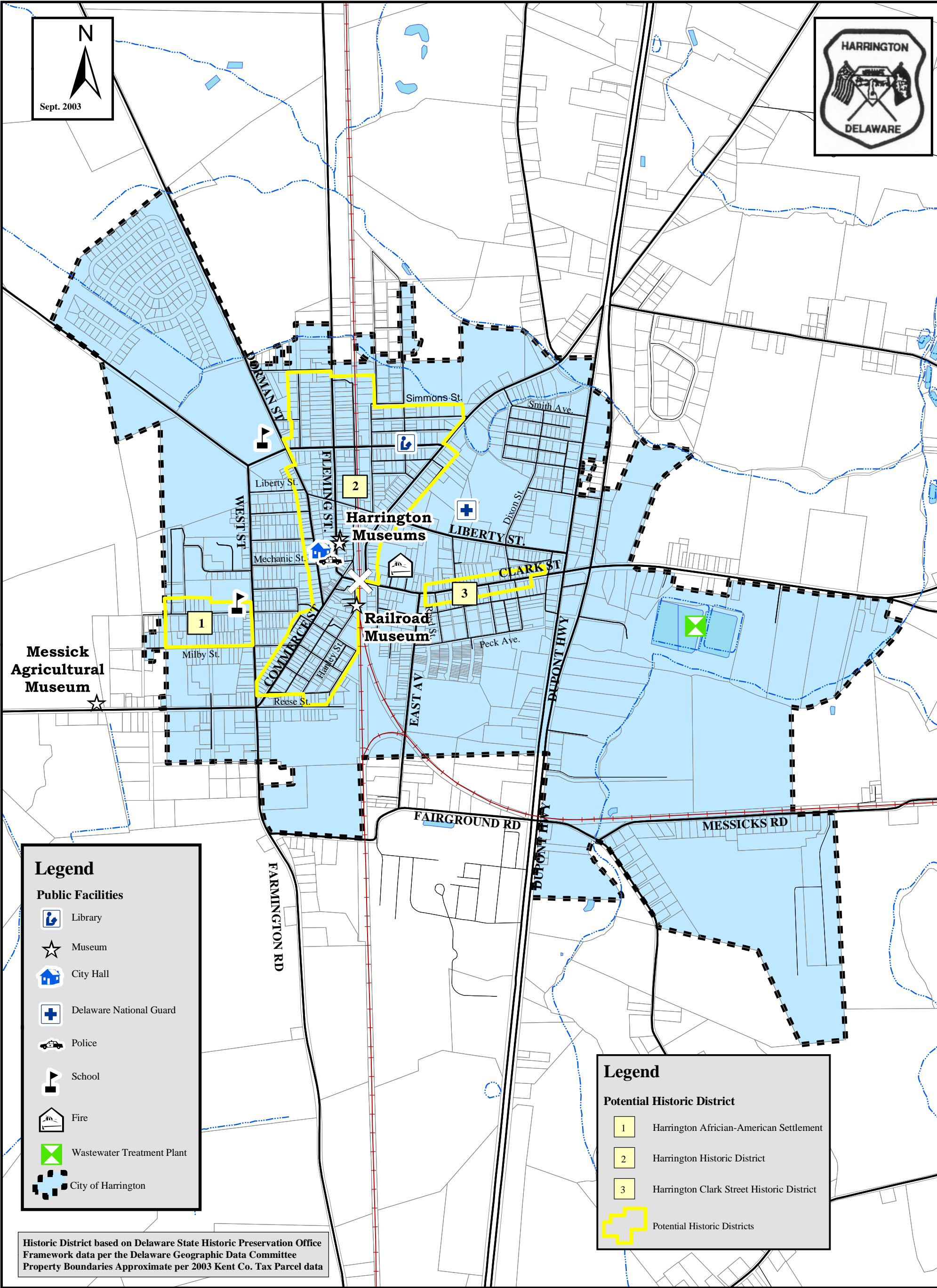
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City of Harrington COMPREHENSIVE PLAN

Figure 5 - Conservation Areas

0 1,000 2,000 4,000
Feet

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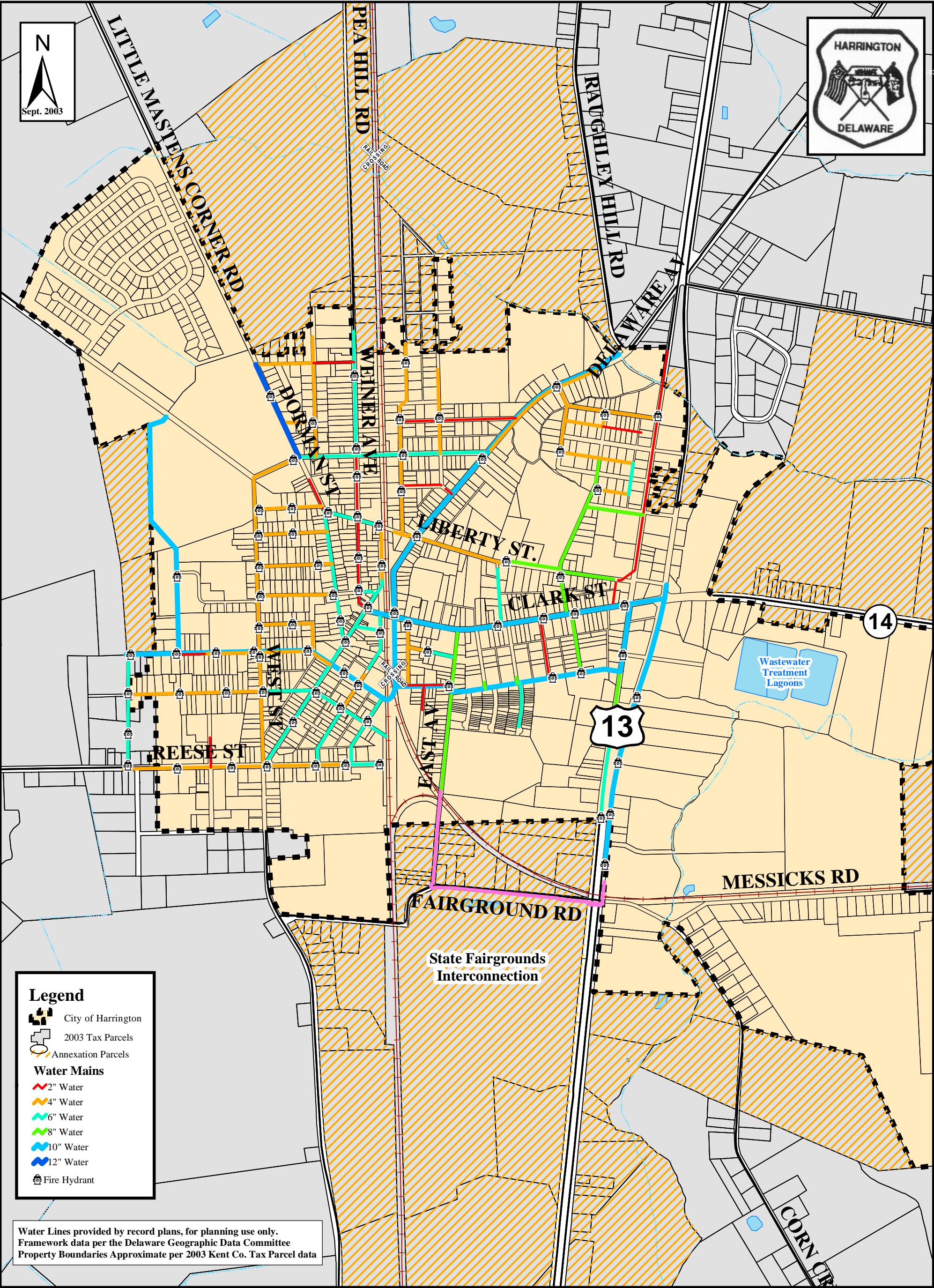


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City of Harrington COMPREHENSIVE PLAN

Figure 6 - Public Service

0 600 1,200 2,400 Feet



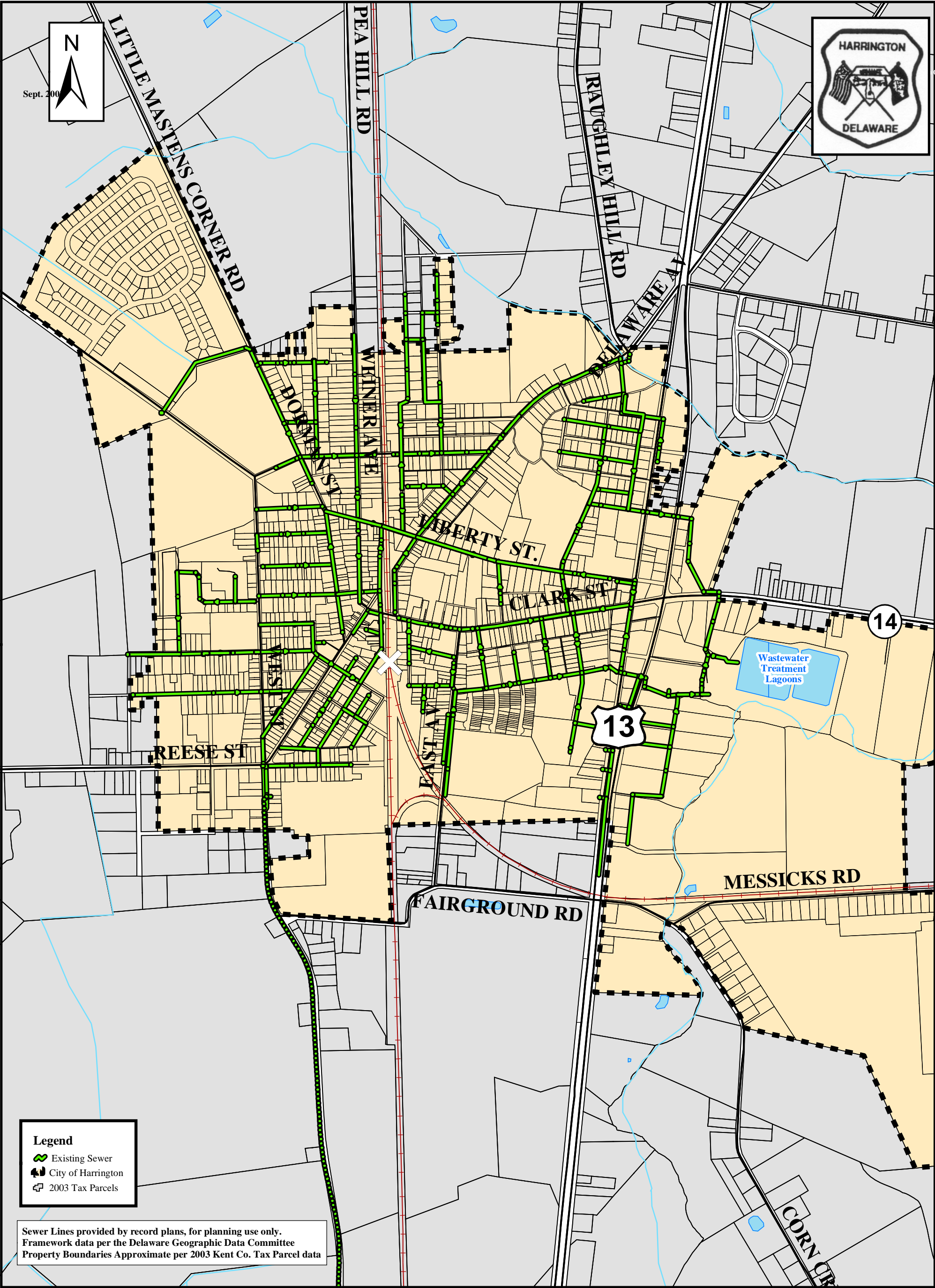
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City of Harrington COMPREHENSIVE PLAN

Figure 7A - Water System

0 500 1,000 2,000
Feet

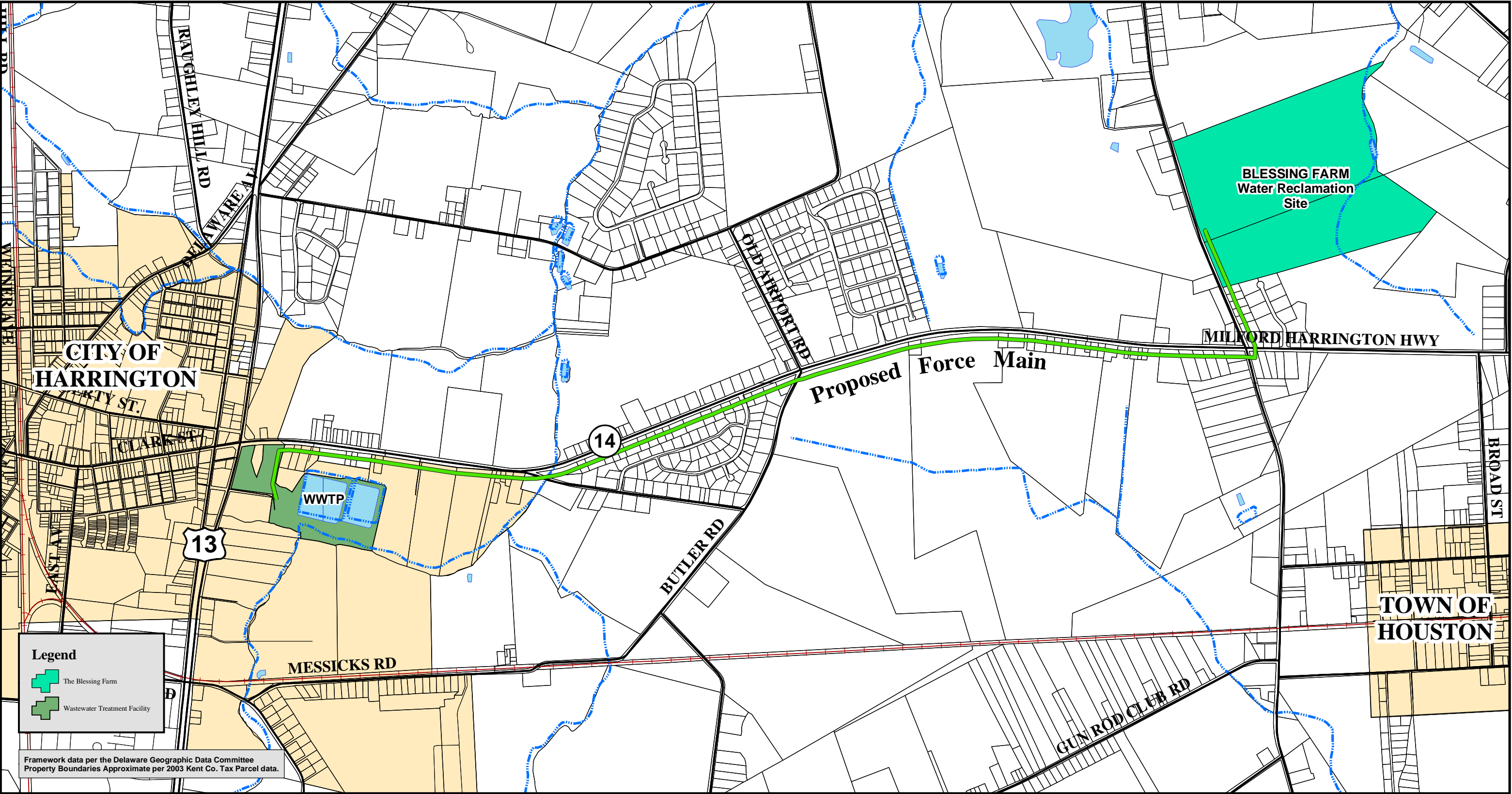
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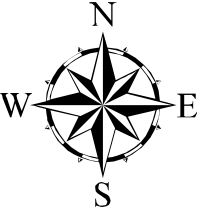
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City of Harrington COMPREHENSIVE PLAN

Figure 7B - Wastewater System



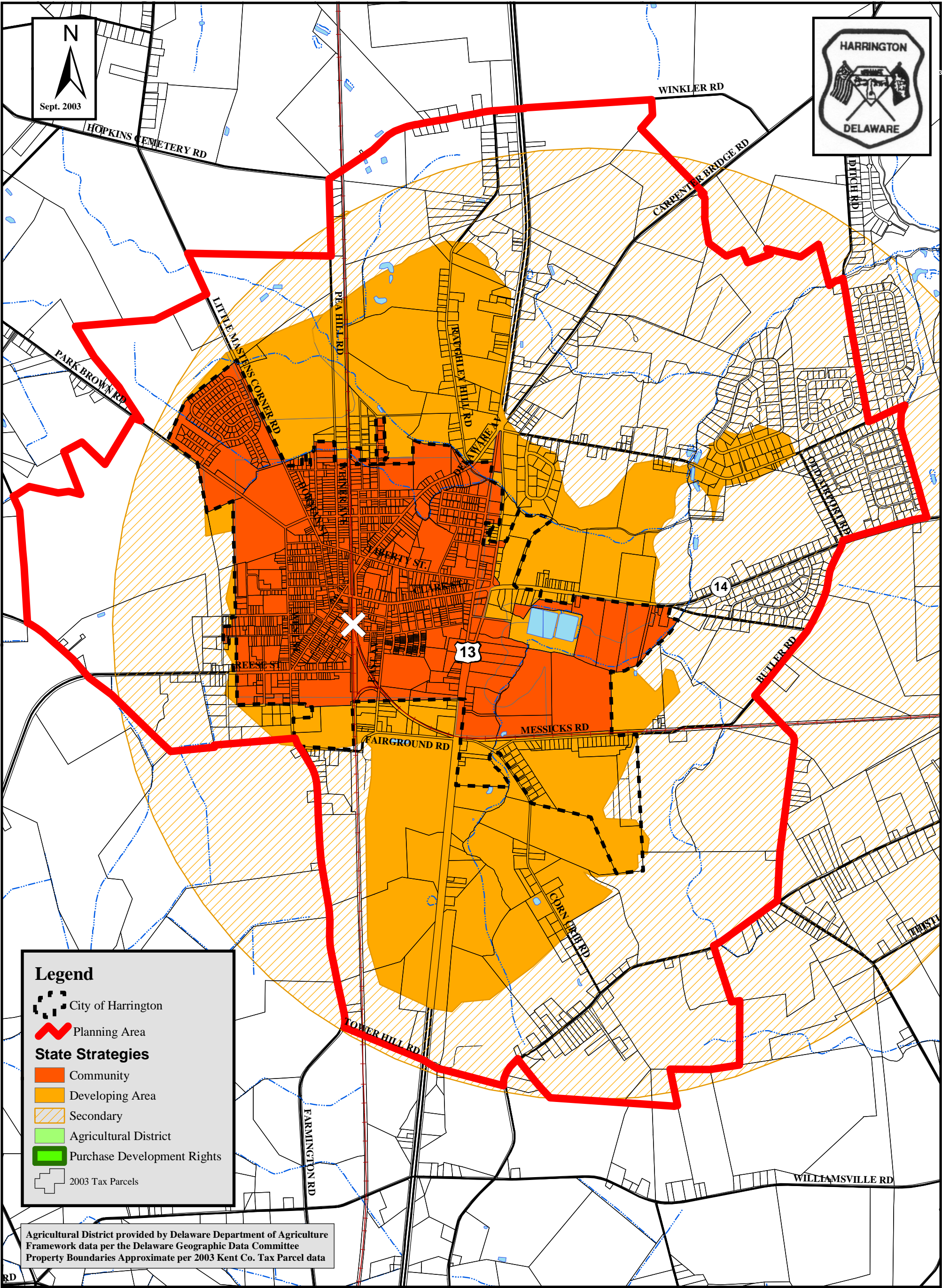
**Figure 7C - Wastewater Treatment
and Spray Site**



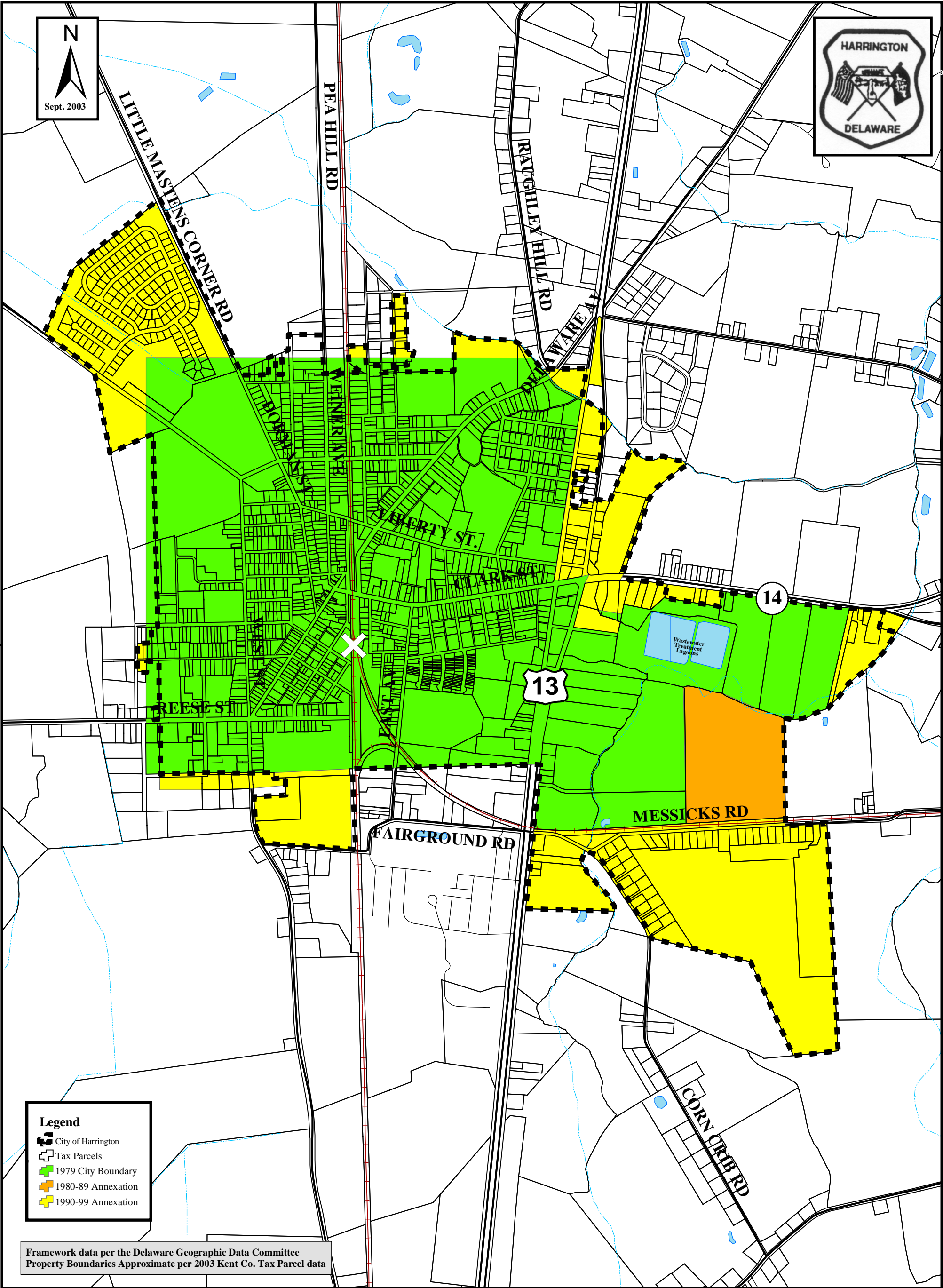
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0 650 1,300 2,600 Feet

City of Harrington COMPREHENSIVE PLAN



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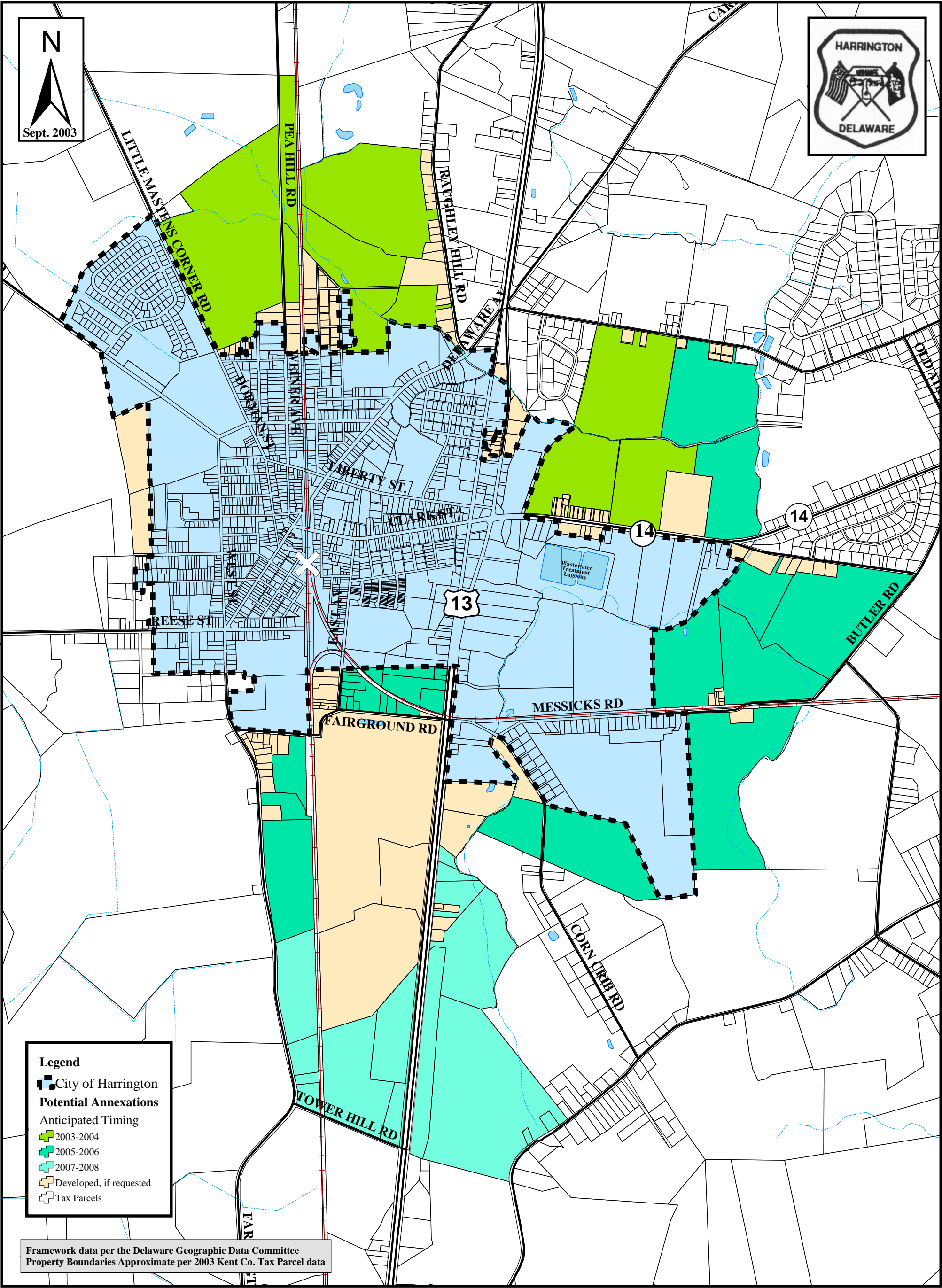


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0 600 1,200 2,400 Feet

City of Harrington COMPREHENSIVE PLAN

Figure 9A - Annexation History



Framework data per the Delaware Geographic Data Committee
Property Boundaries Approximate per 2003 Kent Co. Tax Parcel data

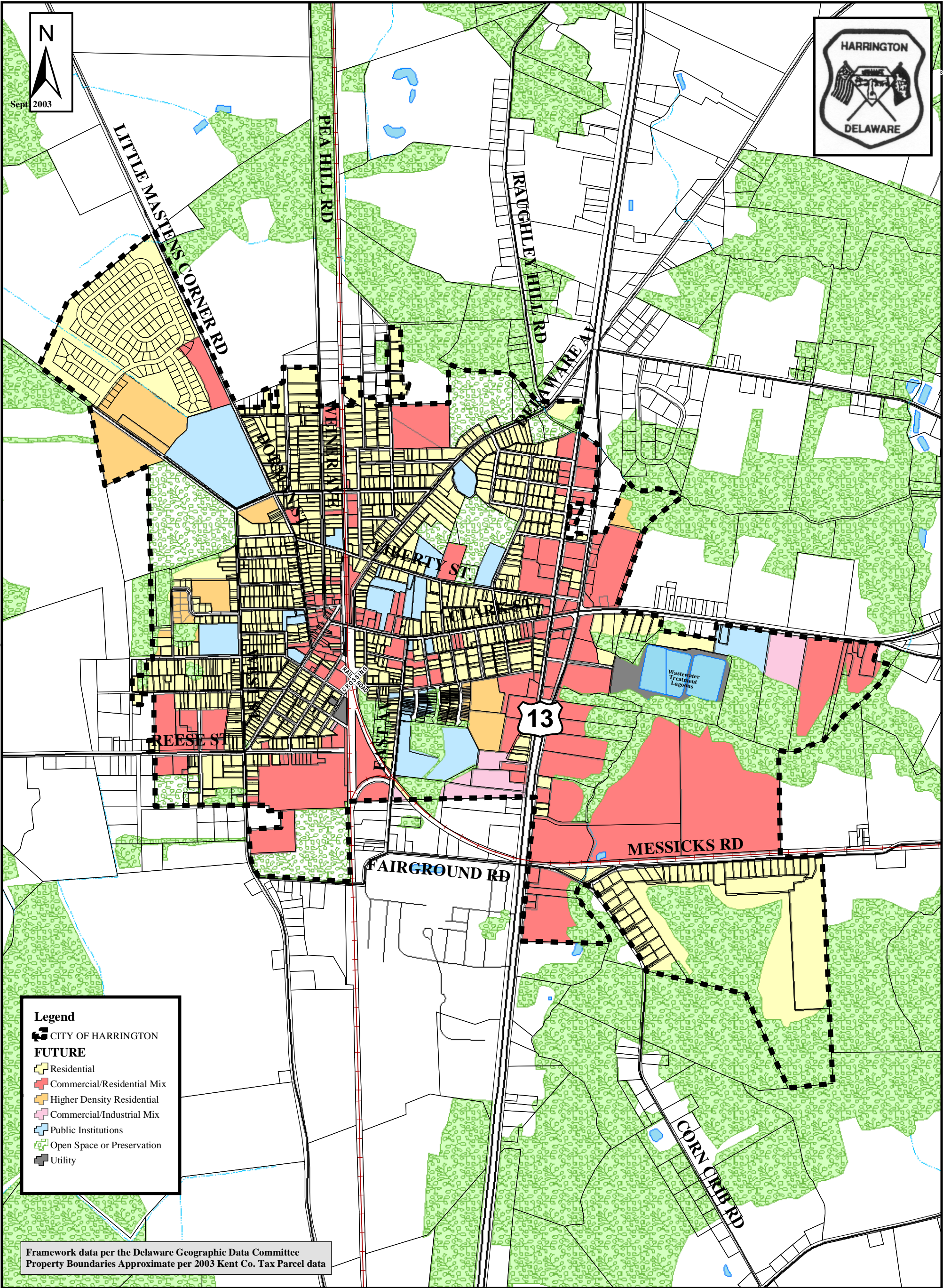
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0 750 1,500 3,000 Feet

City of Harrington
COMPREHENSIVE PLAN

Figure 9B - Annexation
Timing

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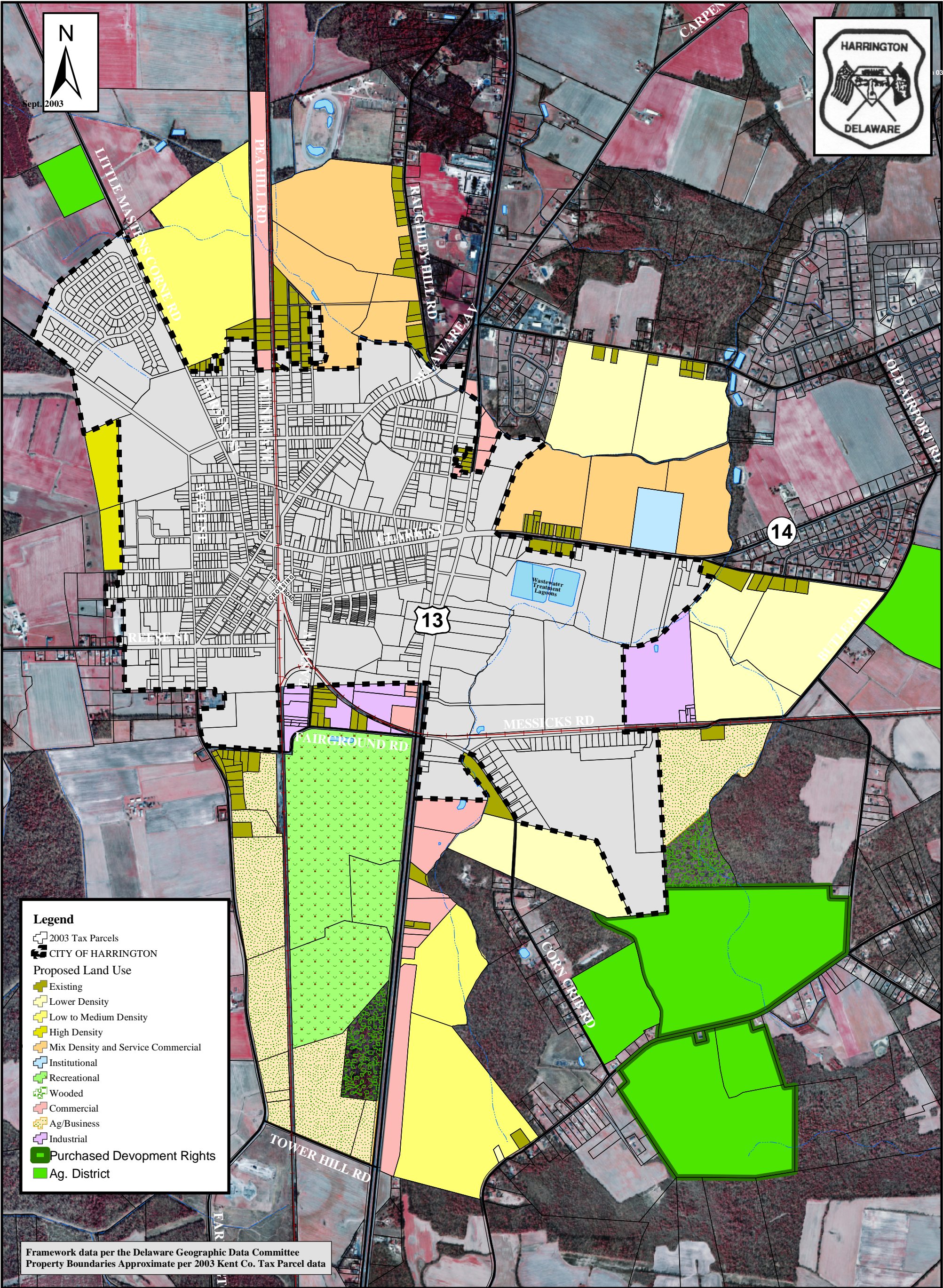
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0 750 1,500 3,000 Feet

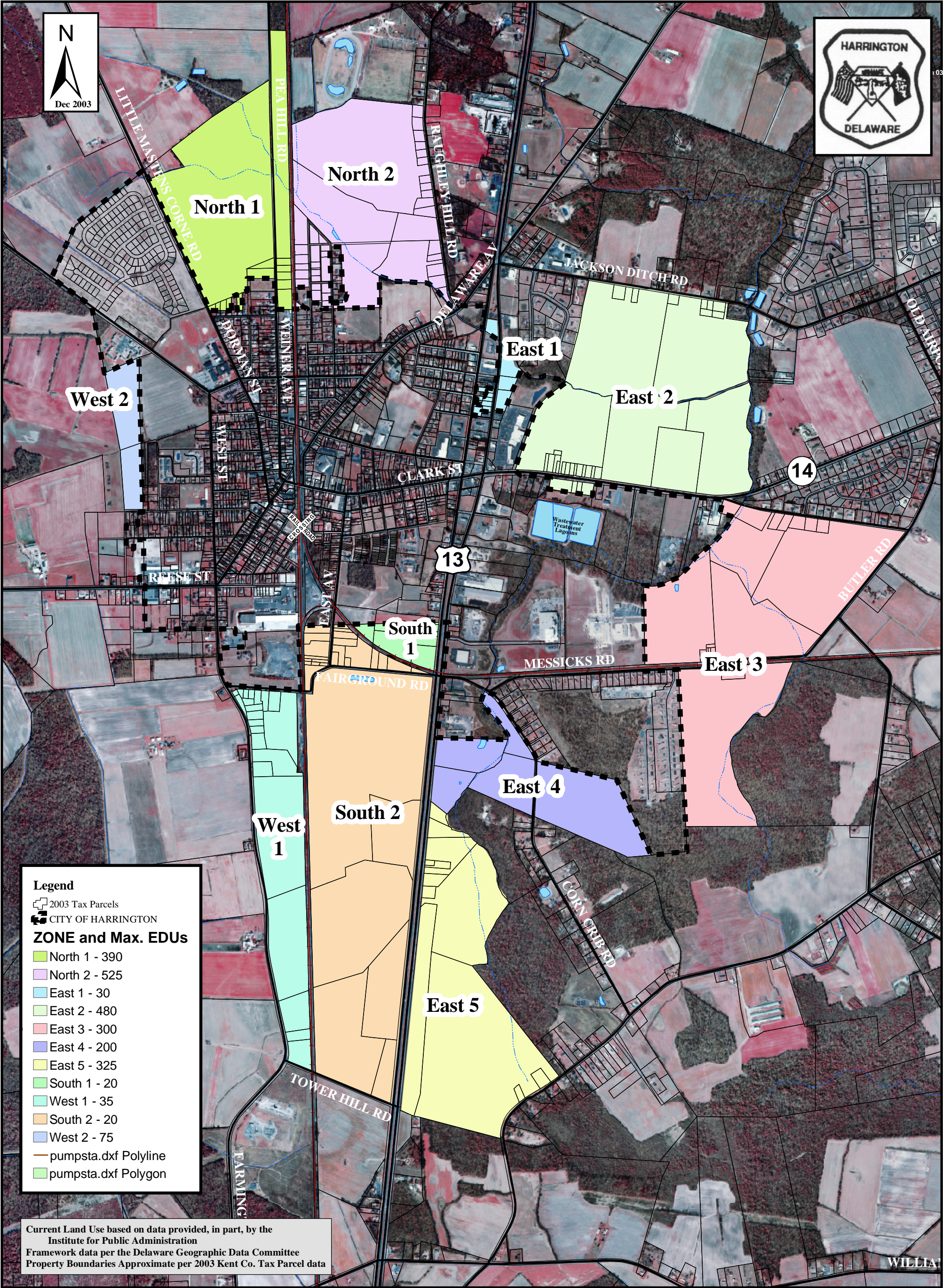
City of Harrington
COMPREHENSIVE PLAN

Figure 9C - CITY
Future Land Use

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0 750 1,500 3,000
Feet

City of Harrington COMPREHENSIVE PLAN

**Figure 10 - Potential Sewer
Expansion Areas**

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